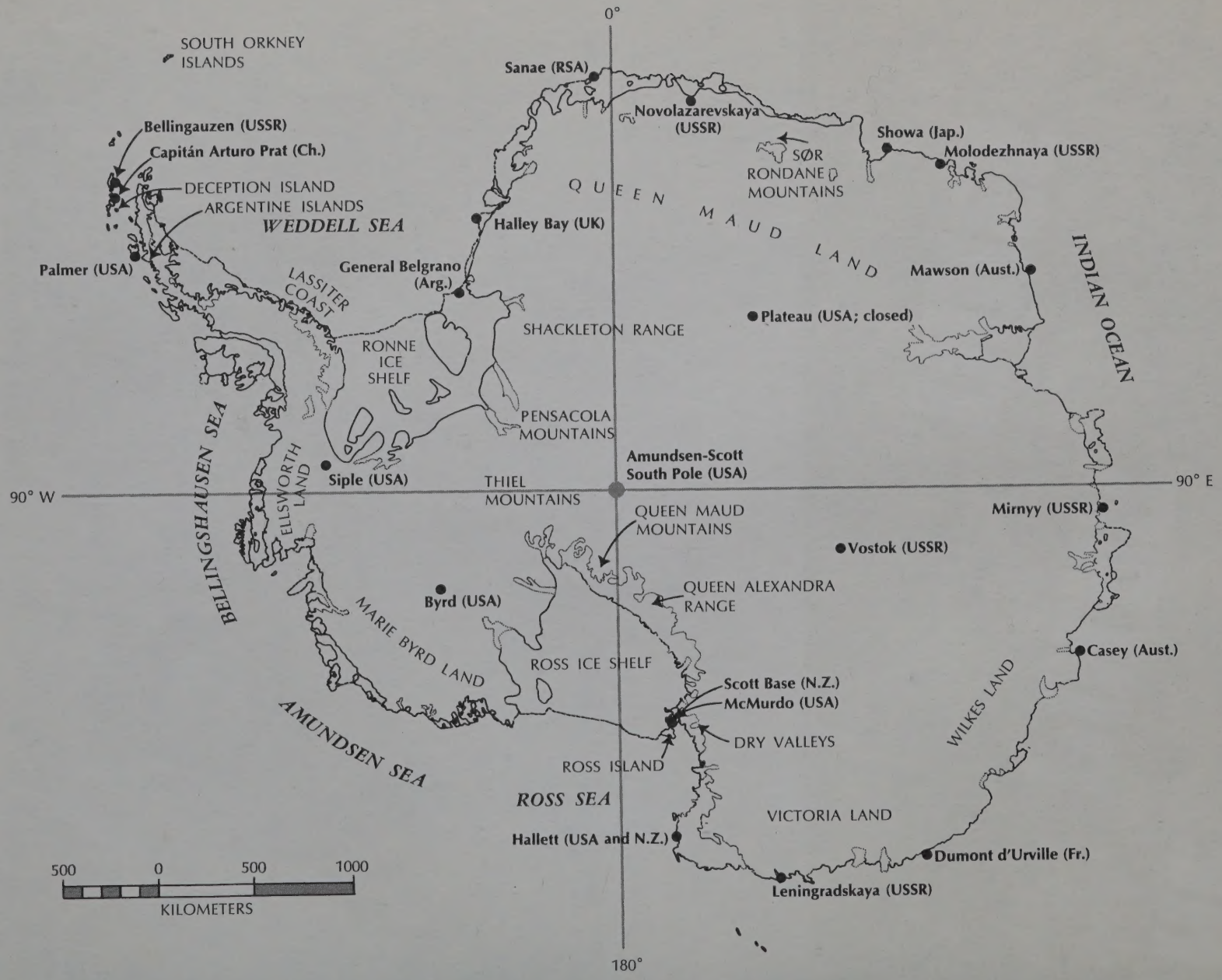
THE POLAR TIMES

A LC-13-F Hercules cargo transport aircraft of Antarctic Development Squadron Six (VXE-6) takes off with the aid of jet assist tanks at Beardmore Station.



ANTARCTICA Selected Stations and Physical Features

The Polar Times

Copyright 1971 by the American Polar Society

No. 73 *DECEMBER 1971*

Back to the South Pole ---'Well, Whatever For?'

Scientist Who Is Returning After 25 Years Points to Secrets of Past and Future

BY ALTON BLAKESLEE
Associated Press Writer

Nov. 30

WASHINGTON — Upon learning that her son-in-law was about to sail on a 24,000-mile, five-month expedition to the bottom of the world — to Little America in Antarctica—Hattie Boulden of Cecilton, Md., mused a moment and said:

"Well, whatever for?"

That was 25 years ago, this writer was the son-in-law, and the question still is being posed by relatives of a small army of men, and some women, who each year engage in or support scientific research in Antarctica, a continent of snow and ice covering 5½ million square miles, an area larger than the United States and Mexico.

No one lives there permanently. There are no Eskimos, no polar bears, but it is the home of penguins, seals and skua gulls.

Nowadays there are 40 to 45 bases or stations operated mostly during the Antarctic summer by 11 nations, with a handful of lonely, isolated year-round bases, including a U.S. base at the geographical South Pole itself. There on the polar plateau, the land lies under almost two miles of ice, for Antarctica contains some 7 million cubic miles of ice, about 95% of the world's supply.

But unless you have a special hankering for huge ice cubes, why, indeed, do people go to such a desolate place, for just the summer or to stay a year, half of it in total darkness? Because, dear Hattie, it is one of the world's most rewarding scientific laboratories, and some knowledge coming from Antarctic studies may well benefit human life in our hemisphere.

Antarctica is a weather factory, influencing general air and ocean circulations—matters that need deeper understanding for improved weather forecasting, or attempts to control weather.

It's a repository of minerals and coal—it has high mountains like the Andes to the north — but as yet there's no economical way of mining the presumed riches.

Some of the first income to come from the white continent—aside from the whaling industry—is accruing to operators of a few cruise ships, including one American line, visiting the continental shores during the summer, when it's winter time in the United States. Some enthusiasts foresee ultimate skiing lodges, to be reached by the rich by plane or ship.

But the scientific harvest has been rising, particularly in the last dozen years. American interest in Antarctica was stimulated by the late Adm. Richard E. Byrd who began his journeys to Little America in 1928, and by the U.S. Navy Operation High Jump in 1946-47.

Scientific exploration began in earnest with the International Geophysical Year of 1957-58, with a dozen nations, including Russia, setting up bases, and 11 countries have continued their research. They've signed a treaty pledging that activities in Antarctica shall be devoted to peaceful purposes only.

Here the National Science Foundation supports the work of U.S. scientists in many disciplines, and the Navy provides logistic support and operates the bases, of which this country has six. The Soviets maintain five.

Altogether, this summer's movements will see about 250 scientists carrying out a variety of studies, with nearly 2,000 men from the U.S. Army, Air Force, Coast Guard and Navy taking part by

Navy Plans Dome at South Pole To Shield Buildings From Snow

By DANA ADAMS SCHMIDT
The New York Times

WASHINGTON, Sept. 8—An aluminum dome, 52 feet high and 164 feet in diameter, will be built at the South Pole by the Navy between Nov. 1 and Feb. 15 next year, Rear Adm. Leo B. McCuddin, commander of the naval support force in Antarctica, announced today.

The Admiral said that the new structure had been designed in such a way as to delay the time when it, like all other structures in the Antartica will be buried beneath the drifting snow.

Existing structures at the United States South Pole base, as well as those at Byrd Station, are buried beneath 50 feet of snow and are in danger of being crushed.

Construction at the South Pole will be part of this season's operation in Antarctica in which the Navy supports the scientists in the Antarctic research program, which is managed by the National Science Foundation.

About 250 scientists from 21 universities and research organizations, supported by nearly 2,000 men from the Army, Air Force, Coast Guard and Navy, will carry on studies at six Antarctic stations and aboard icebreakers, beginning Oct. 8.

The bubble, which is being built by the Temcor Polyframe Company of Torrance, Calif., will cost $3.5-million.

Beneath the bubble, rectangular aluminum buildings will contain quarters for 16 men, each of whom has a room 6 feet by 10 feet. Double bunks will permit increasing the staff to 32 in "summer."

Other facilities beneath the dome will include a science building, a communications center, a store, a library, a galley, a post office and a meeting hall.

Admiral McCuddin said that during Antarctica's brief summer, when temperatures occasionally creep above freezing, the scientists will carry on a broad range of studies. The projects will cover fishes, fungi, surface buckling of glaciers, microorganisms, the behavior patterns of baby penguins and population patterns of Antarctic seals.

Government agencies as well as private organizations will also be conducting research programs, the admiral said.

The groups include the National Aeronautics and Space Administration, the Geological Survey, Bell Telephone Laboratories and the Lockheed Missiles and Space Company.

Navy engineers said today that the giant bubble would not be at the geographical South Pole but would be 1,700 feet "upstream" from the pole. The old polar base is 3,019 feet "downstream." The terms allude to the drift of the polar cap in the direction of South America, which is expected to move the new base exactly over the pole within five years.

ship and plane.

Some of the scientific findings were recounted in recent interviews by Dr. Louis O. Quam, chief scientist for the Office of Polar Programs for the NSF, and Philip Smith, deputy head of the same office.

Antarctica provided what some scientists regard as the clinching proof that continents drift, that once there was a huge continent Gondwanaland. Sections of it drifted apart to become, by this theory, South America, Africa and India, with the Antarctic land mass staying about put.

The evidence partly involves discovery of fossils of reptiles and plants in Antarctica, which once had a semitropical climate, that are just like the fossils found on the other continents. The animals could not have migrated across oceans, hence are presumed to have had a common home at one time.

Rocks in the Sahara Desert are like some of those in Antarctica, and show evidence of erosion from glaciers.

Glacial ages have come and gone, and there are clues now of a general relationship of waxing and waning of the ice masses in Antarctica and in Greenland and Iceland. Scientists are trying to determine what's happening to Antarctic ice and glaciers, for clues of what kind of climatic change may be coming our way.

History is written in Antarctic ice. Particles in the atmosphere can fall down and become trapped. Scientists have dated Pacific bomb tests from radioactive debris trapped in annual layers of ice.

Increased amounts of carbon dioxide sealed in the ice date back to the beginning of the industrial revolution. And man's use of DDT has been reflected by finding the insecticide in the bodies of penguins and seals. The amount of lead in animals and snow has increased, too.

Physics of the upper atmosphere, including auroral displays, are adding to knowledge of magnetic fields and the ionosphere, and among Weddell seals biologists are probing the mystery of how these big animals dive to depths of 1,200 feet or more to forage for food, then rise to the surface within a minute or two without developing the "bends."

Once everything about the Antarctic was secret. Intensive exploration is changing that.

And one change is that while an expedition by ship took almost five months in 1946-47, a revisit this year will take only three weeks, by air to New Zealand, then by plane again to McMurdo Sound, 800 miles from the Pole, with McMurdo possessing airstrips and a nuclear power plant providing electricity.

But the question, "Whatever for?" persists. Smith tells of being asked by a Seabee heading down for some Navy construction work.

"For 15 minutes I told him all the reasons I could think of and he replied: 'If God had intended us to go to that place, there would be natives there.'"

The Polar Times

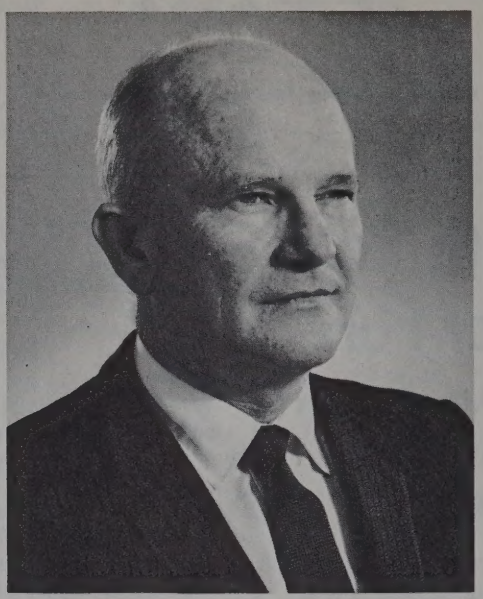
Published June and December by the
AMERICAN POLAR SOCIETY,
August Howard, Secretary,
98-20 62nd Drive (Apt. 7H),
Rego Park 74, New York.

AUGUST HOWARD, Editor

THE POLAR TIMES highly recommends "The Polar Record," published by the Scott Polar Research Institute, Cambridge, England.

The American Polar Society was founded Nov. 29, 1934, to band together all persons interested in polar exploration. Membership dues are one dollar a year, which entitles members to receive THE POLAR TIMES twice a year.

Back issues are 50 cents each.



Univ. of Washington

Joseph O. Fletcher to head Office of Polar Programs

Mr. Joseph O. Fletcher has been appointed Head, Office of Polar Programs, effective September 1, 1971.

Mr. Fletcher, currently a research professor of oceanography and atmospheric sciences at the University of Washington, has been a research scientist with the Rand Corporation in Santa Monica, California, since 1963. His scientific interests include the effect of polar ice on world climate, about which he has written numerous research papers. Mr. Fletcher brings with him expertise in problems of the environment, especially as they relate to the polar regions.

On June 1, 1971, Dr. Louis O. Quam, acting head of the Office of Polar Programs since December 1969, resumed his duties as chief scientist for the office. Mr. Philip M. Smith serves as acting head until September 1, when he will revert to the deputy head position.

Scientific Huddle

Dec. 7

McMURDO STATION, ANTARCTICA—About 100 extra scientists, technicians and U.S. Navy personnel arrived at McMurdo Station for studies and construction projects during the Antarctic summer.

They were accompanied by several invited guests, includin Finn Ronne, the veteran polar explorer whose father participated in the discovery of the South Pole by Roald Amundsen 60 years ago.

The 32-degree Fahrenhit temperature of the late Antarctic spring here is considered a local heat wave.

Antarctica to Be Mapped

CHRISTCHURCH, New Zealand, Nov. 6 (Reuters)—Six scientists are to visit Antarctica to map the continent, which is under thousands of feet of ice. They will spend two months using a specially modified aircraft equipped with radar.

American Polar Society

DR. F. ALTON WADE
President

DR. THOMAS C. POULTER
CAPT. FINN RONNE
DR. JOHN H. ROSCOE
WALTER SULLIVAN
Vice Presidents

AUGUST HOWARD
Secretary

DR. WILLIAM O. FIELD
Treasurer

Board of Governors

ROBERT B. ATWOOD
PROF. WILLIAM S. BENNINGHOFF
LOUISE A. BOYD
DR. RICHARD L. CAMERON
R. ADM. GEORGE DUFEK, U.S.N. (RET.)
HERMAN R. FRIIS
EDWARD E. GOODALE
DR. LAURENCE M. GOULD
ARNOLD M. HANSON
ROBERT J.R. JOHNSON
DR. WALDO K. LYON
CAPT. DAVID C. NUTT
DR. NED OSTENSO
GERALD PAGANO
CHARLES E. PASSEL
DR. MARTIN A. POMERANTZ
DR. ALAN H. SHAPLEY
CHARLES H. STOLL
R. ADM. CHARLES W. THOMAS, (RET.)
PROF. NORBERT UNTERSTEINER
DR. H. BRADFORD WASHBURN, JR.

C-141 jet at Williams Field in the Antarctic.

First Glimpse of Antarctica —White, Vast, Implacable

Louise Hutchinson is a member of THE TRIBUNE's Washington staff and is one of two women taking part in a trip to the Antarctic sponsored by the National Science Foundation and the United States Navy.

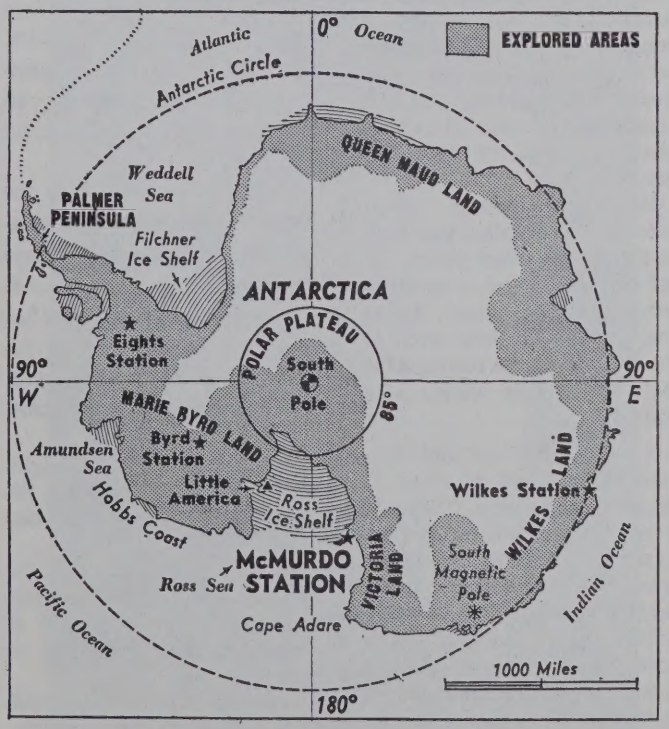
BY LOUISE HUTCHINSON

[Chicago Tribune Press Service]

McMURDO STATION, The Antarctic, Dec. 7—There is a wrenching excitement to your first view of the Antarctic, a kind of childhood terror at anything so far beyond the grasp of mind and heart.

"This is it," said the pilot of our C-141 jet smiling a bit at a first time visitor for whom this vast continent has been a personal promised land for weeks.

It was a dream sequence, this airborne sighting, with no landmarks to anchor to reality. With that sense of drifting that big jets give passengers at high altitudes, we appeared to float above a landscape so white, vast, and implacable that it seemed alien to all the hopes and hungers of man.



Glacier tongues poured down to the sea. Mountain peaks groped beyond the snow and ice that at one spot has been measured at 14,000 feet in depth. Crevasses pencilled the snow 35,000 feet below. The sky was blue. The Ross Sea was blue, but part of it was choked with ice that in the 1770s guarded the land itself from British Capt. James Cook who sailed around the Antarctic and had to guess that a continent lay somewhere in there.

And even the ice and snow, so white it seared the unprotected eyes, was cast in blue in spots. This is the bottom of the world, the South few go to in the winter. A land where even today, in its summer season, perhaps only 2,000 men of varying nationalities call temporary home.

Our four-engine jet, with its 166 passengers, lands on the ice, the runway feeling like washboard. This is the annual ice that forms on the sea, ice now almost 8 feet thick, but ice that as summer progresses may well be swept out to sea.

On board for this National Science Foundation-United States Navy trip are military scientists, a few distinguished visitors, and a handful of press. There are two women —Mrs. Finn Ronnie, wife of a former Antarctic explorer and myself.

There on the ice as we tumble out into the glare of white are orange buses to take us the six miles across the ice to McMurdo Station, the main American base in the Antarctic.

McMurdo itself is built on volcanic rock, a kind of late 20th-Century pioneer village, home to perhaps 1,000 in the summer, guarded by Mount Erebus, a still active volcano spurting steam.

These buildings, perched on small hills, seem a fragile anchor for man against the sudden storms, the violent winds, the white outs that blank out all surface dimension. And if one laughs at the warnings, there are identification tags tinkling around our necks as reminders that this is not home.

From here this summer, and in summers past, and a few in winter following the explorers of old, the new explorers, the scientists, have gone forth into parts of this continent as large as the United States and Mexico, searching for secrets of continental drift, of weather, of minerals, probing secrets of the history of the earth.

The United States this year will spend about $34 million on its Antarctic project. Tomorrow we go to the South Pole, and there is no time to argue relevancy.

South Pole Woman

BY LOUISE HUTCHINSON
[Chicago Tribune Press Service]

THE SOUTH POLE, Dec. 8—Sixty years ago Dec. 14, Roald Amundsen, a Norwegian, stopped his dog teams, shook hands with the men with him, and became enshrined as the first man to reach the South Pole.

Hutchinson

Last night, I became a minor footnote to South Pole history: the first woman to spend a night there.

Some who come here see it as a great wasteland, a spot in a desert of ice that stretches flat to the horizon and far, far beyond under a summer polar sun that never sets.

I shall remember the pole with Christmas warmth because of the kindness of men who admittedly see few women. They helped me thru two miles of frost-coated tunnels, did duty at both doors of the one bathroom when I repaired thereto, and offered assistance when the altitude of 9,200 feet sent me bobbing and weaving.

The South Pole and the Antarctic are not to be remembered alone as brute scenes of giant glaciers coursing toward frozen seas nor as mountain chains poking thru ice as deep as 14,000 feet. The South Pole and the Antarctic are a gut feeling that cannot be conveyed. Remarkable men whose fortitude eludes description labor here.

Our polar day on this National Seience Foundation-United States Navy trip began for me at 5:15 a. m. yesterday at McMurdo Station in the Antarctic. I began donning the endless array of survival clothing that makes movement an effort and walking a skill.

We flew 836 miles due south to the pole on a ski-equipped LC-130, a remarkable aircraft that hauls men to these remote Antarctic regions, takes them out, and provisions them with everything from food stuffs, mechanical equipment, and bed linens to the vital fuel that makes life possible here.

It was 19 degrees below zero when we arrived at Amundsen-Scott Station, the American base at the pole, but the wind made a chill factor of about 52 degrees below zero. In 10 minutes outside, frost forms on your upper lip, and those wise in polar ways watch for signs of a frostbitten nose.

It is a scene of desolation—an ice runway, six buildings breaking the bleak landscape, a small forest of radio antennae, a bright torrent of flags of nations that have signed the Antarctic Treaty, a barber pole that marks the "tourist pole."

But the South Pole is more. It is nausea, dizziness, blue fingernails and lips, and a heart that now and again races frantically. I am told this is mountain sickness, or oxygen hunger. For most who come here to live it passes in a few weeks when the body develops about 10 per cent more red blood cells to carry more oxygen.

Men live mostly underground. This station was built in 1957 at the exact geographical pole, now about three-quarters of a mile away. In 14 years, the relentless force of ice has moved the station 4,000 feet. A new pole station soon will be built.

A series of rooms and laboratories are kept at about 72 degrees above zero. They are linked by tunnels shored up against the weight of ice and snow. In the tunnels, the temperature is zero.

Thirty-seven visitors came here on the plane. Among them was Mrs. Finn Ronne of Bethesda, Md., wife of a former Antarctic explorer. Those who reckon such things say she and I became the 8th and 9th women to set foot here. Most of the visitors left on an early flight back, but seven reporters and a few others stayed for a later flight.

We talked to scientists, ate at the mess, inspected the base, and spent the evening waiting for the expected plane in the recreation room.

I played darts, danced, watched the nightly movie, talked, and wondered how these 57 men maintain the inner balance to survive in such utter isolation.

Theirs are faces that will stay with me forever: a young Seabee who is proud that he is doing peaceful and scientific work that helps people, a Navy lad who wanted his picture taken with me because no one would believe it, Lt. Kenneth Shaffer, a medical administration officer, who, when it was clear the plane would not make it that night, gave up his bed for me.

There was Kenneth Heeps, representative of the National Weather Service who has wintered-over at the pole, an experience that is a badge of honor. He talked intently about what it all has meant to him. There were many more—mostly Navy, some scientists, all young, because who else could survive?

Most are here only for the summer when activity is frantic, the work week 6½ days long, and showers are permitted once a week because ice must be bulldozed into the melting unit and purified. There is always a water shortage.

The party ended at midnight. I made a quick visit up the icy, perilous steps to the outside.

There, incredibly, was the brilliant sun and the ice glittering in frozen refutation of everything man thinks of as home.

I awoke this morning, still fully clad in my heavy pants, long underwear, and wool shirt. A sign on a locker said, "Ring for oxygen." Some needed it but not I.

It took minutes to realize that I was still at the pole. There followed a trek thru the cold tunnels, a pancake breakfast, and stories from men in our party who tried to sleep in an outside hut where the heat went off and the temperature dropped to 25 degrees below zero.

If our sturdy, noisy plane skis in on time, I will have spent 23 hours at the pole. It has been a privilege—and more. It has been self-revelation as chilling as the air outside. I am not the stuff of which heroes and frontiersmen are made, and I sense that the testing my hosts undergo daily would crucify me. The Antarctic shall remain with me forever, but I shall never belong to it.

SALMON CURB ASKED BY U.S. AND CANADA

WASHINGTON, Dec. 24 (AP)—Voicing fear for the survival of Atlantic salmon, the United States and Canada called for an immediate halt to salmon fishing in international waters.

A joint statement issued in Washington and Ottawa mentioned no nations, but was aimed particularly at Denmark.

Danish vessels, and to a lesser extent some from Norway and Sweden, have been taking salmon on high seas west of Greenland despite an international conservation agreement to ban salmon fishing beyond 12 miles offshore.

Also today, President Nixon signed a bill authorizing him to prohibit fish imports from nations whose fishing operations diminish the effectiveness of international fishery conservation programs.

Canada and the United States, which have spent millions of dollars to promote salmon runs from their rivers, contend the fishing should be restricted to domestic waters.

Their joint statement said: "The Governments of Canada and the United States have viewed with grave concern the failure of the North Atlantic fishing nations to agree completely on a ban on the high seas fishery for Atlantic salmon."

The Danish view is that fishing in international waters is a sovernign right and that scientific evidence has not yet proved that catching salmon on the high seas will destroy the stock.

Antarctic a Close-Knit Community

BY LOUISE HUTCHINSON
[Chicago Tribune Press Service]

McMURDO STATION, the Antarctic, Dec. 13—There is a strong sense of neighborliness in this mesmerizing deep freeze called the Antarctic, a continent the size of the United States and Mexico where no more than 2,000 people live and work.

So today, we went calling—by helicopter. We dropped in, swooping low over a glacier, on Mauri and Eileen McSaveney who live in a canvas hut 1,000 feet up a steep mountainside above a deep valley alongside the glacier.

It is called the Meserve Glacier and in this Southern Hemisphere summer, it is the study project of Mauri, 26, a glaciologist, and Eileen, 27, a geologist, both of Ohio State University. They are interested, among over things, in why glaciers buckle on top.

Their frozen steaks, pork chops, and hamburgers are tucked away in a handy natural freezer they hacked out of the glacier. A ladder takes them up the 60-foot face to the glacier itself which is creeping along about 15 feet a year.

They are not lonely or desolate or bored, they said, and Eileen, troubled by such questions, finally said, "What is the fun of living in a house in the suburbs and having nothing in particular to do?"

They have their radio, their books, and a comfy hut. They send a daily required radio report to McMurdo station to be sure everyone knows all is well. Helicopter pilots darting past or dropping in to deliver mail or supplies.

Of course, for Mauri and Eileen, such Antarctic sophistication is fine. Both are scientists and have been here before. For me, who had dined at the White House and visited such spots as Moscow, it was stupefying.

Landing in a helicopter on a mountain in a high wind 15 feet from a glacier is not daily fare. Debarking to look far down at one of the Antarctic's famed dry valleys—now snow or ice is in them—made me quiver.

Even the trip into the McSaveney's glacial refrigerator, slipping and sliding over fallen glacial ice, made me think I'd forego the steaks and settle for something canned.

But the day on our National Science Foundation-United States Navy trip was another dream episode, a day of such sights that emotion overpowered, belief in vision failed, and I was certain that Cecil B. De Mille would suddenly move away the mountains, the icebergs, and the valley like Hollywood sets because things so awesome could not be real.

We left McMurdo to fly by two Huey helicopters to the mountains beyond the sound. In some areas, the sea ice was breaking up under the summer sun, ice tortured, crushed, folded upon itself, imprisoning great tabular icebergs that from a distance resemble aircraft carriers without bridges, and cut some places into floes.

We flew past mountain after mountain, then up a glacier, then into the 60-mile long dry valley, flying between ridges of mountains as high as 6,500 feet.

The air was clear, that kind of clarity city dwellers have long forgot. The sky was blue, a pure color urbanites may never know. And there was the valley, snowless and iceless for reasons no one yet knows on a continent that is literally an icecap.

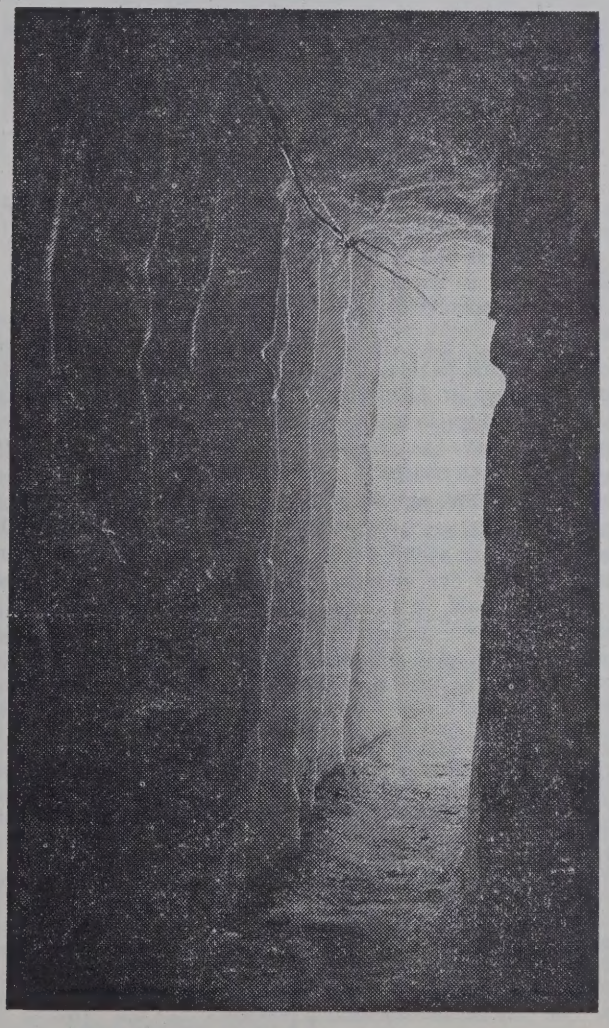
We set down at a valley pond studded with boulders and visited the orange-tented camp of scientists from Northern Illinois University at De Kalb, here for work preparatory to drilling next year in the valley floor.

We flew on to visit a New Zealand camp next to a frozen lake where bottom temperatures are 72 degrees above zero. Here we slid up and down hills of shale while a fierce valley wind suddenly blew up, pounding the camp dwellings as tho with a fist.

On the way back to McMurdo, there were hundreds of emperor penguins below on the ice, like white-bellied exclamation points.

Some may be uncertain where the Antarctic is—look at the bottom of your world globe — but everyone knows what a penguin is. So excited was I to see them after seven days here that I reared up in my seat, leaned over a copter crewman, and screamed above the roar of the rotors, "At last, I've seen a penguin." But such foolishness is not the proper epilog for this day of wonder.

Rather, with unscientific humility, there is the question that if God did rest on the seventh day after creating the earth, as we were taught as children, did He look again at the Antarctic and say, "indeed, I have done well"?



Underground rooms and laboratories are linked by tunnels shored up like passages in a mine. In the tunnels, the temperature is zero.

Doctors Unwilling To Work in Antarctic

Reuter

CANBERRA, Oct. 20—Australia may be forced to close some of its four Antarctic stations for at least a year because the government has been unable to recruit doctors to staff them, Supply Minister Ransley Garland said tonight.

Oldest Senator On Coldest Trip

Christchurch, New Zealand, Dec. 16 (Reuter) — The oldest member of the U.S. Senate will visit Antarctic Saturday. Sen. Allen J. Ellender (D-La.), 81, chairman of the Senate Appropriations Committee, will travel on board a Royal New Zealand Air Force Hercules aircraft and spend three days inspecting U.S. facilities on the Antarctic continent.

Fishing with Long Line at Pole

BY LOUISE HUTCHINSON
[Chicago Tribune Press Service]

McMurdo Station, the Antarctic, Dec. 12. They tell you that the heroic days are over of Antarctic exploration when men pitted only their wits, their dog teams, and their lives against the frozen wilderness.

But even now, surrounded by many comforts of home, a sensation of loneliness haunts the first time Antarctic visitor like a spectral presence.

This morning we traveled to a fishing hole to see how the fish were biting—a happy junket on this National Science Foundation-United States Navy trip.

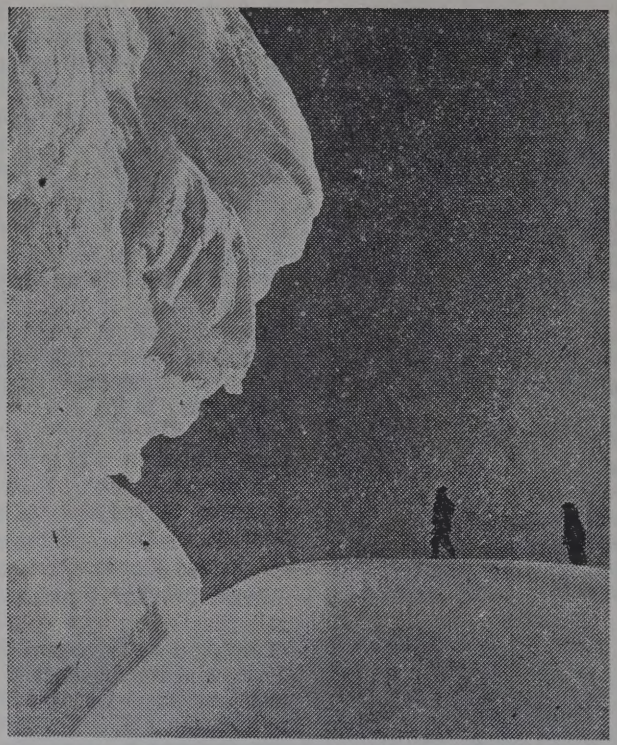
The bright red fishing shack was three miles out from McMurdo Station on ice that soon will start to break up and be swept out to sea.

Our squat, fat-treaded vehicle delivered us safely across the ice, and the shack was warm and comfortable. A gaping hole in the ice was put there by a Navy drilling rig. A gasoline-run winch pulled up the cable that serves as a fishing line from its 1,700-foot depth.

However, the truth again was apparent: in the Antarctic, it is nature that reigns supreme.

Dwarfing all these human accommodations were the majestic mountains draped today in clouds, some surly and gray. The flat sky dipped to the ice so you could tell neither where one began nor where the other ended.

The wind gusted up to 28 miles an hour and whirled the snow in the 14 above zero temperature. Skua gulls drifted on the wind currents and visibility began to lessen as tho sky and clouds and mountains were closing in.



[U. S. Navy Photo]

Snow cliffs carved by Antarctic winds dwarf scientists.

This isn't sport fishing. It is scientific fishing. Dr. Arthur Devries of the Scripps Institute of Oceanography in San Diego, Cal., is the man in charge.

He is studying an "anti-freeze" in the blood of these Antartic fishes, an additive that permits them to live in water so cold it would kill their warmer water cousins.

It took about 15 minutes to winch up the cable. There in the traps were some pink and gray fish, wriggling like eels: a small, white octopus, a few starfish, an orange sea spider, and some other exotic things.

Present also were thousands of tiny wriggly crustaceans that look like worms and are such effective scavengers they can strip to a skeleton a large fish caught helpless on a hook.

We started back across the ice to McMurdo, the bustling mini-city which is the home now for 1,000 people during the southern hemisphere summer.

McMurdo, by any measure, is a major achievement. It has a small nuclear power plant, an intracity telephone system, and fuel storage tanks. It soon also will have two incinerators and a treatment system for sewage.

The dangers of Antarctic winds and blizzards seem remote when one walks its streets, but viewed from the ice, there is a poignancy to the scene. Clinging to its lava rock hills, McMurdo seems dwarfed and vulnerable.

In fact, McMurdo looks like just what it is: a mere toehold on an ice-capped continent where the welcome mat today reads the same as it did to the early explorers — Danger! Beware!

Stans, After Four, Rejects Contentions Of Cruelty to Seals

WASHINGTON, July 14 (AP) —Secretary of Commerce Maurice H. Stans described as totally unfounded today charges that seals on the Pribilof Islands off Alaska were being inhumanely and indiscriminately slaughtered.

Mr. Stans, returning from a trip to observe harvesting of seals, said in a statement: "The crop of these animals is being managed and harvested under scientific practices just as domestic animals are raised and harvested."

Environmental groups have charged that harvesting of the seals is inhumane, asserting that baby seals and female seals are being killed.

But Mr. Stans contended that the only harvesting taking place was of male seals 3 or 4 years old who are apart from the breeding herds.

"Except for the fact that the operation takes place in the open," he said, "the method of harvesting is very similar to that which takes place in a meat-packing plant."

He said that the male seals were removed about 100 yards from the beach and sorted into small groups. Then, he said, each animal is rendered unconscious "by a quick blow to the head" and immediately killed by bleeding. The entire process, including the skinning of the dead animal, takes about one minute, he said.

Mr. Stans said that, if a better method of killing seals could be found, it would be adopted.

"The harvesting of the seals is a source of practically all of the income of the 700 Aleut residents of the Pribilof Islands," he said. "To deprive them of this income would make them dependent on the Government."

The Commerce Secretary said that the number of seals on the islands was estimated at 1.3 million, compared with 200,000 60 years ago. "There is no present danger whatsoever of extermination of the herd under these policies," he said.

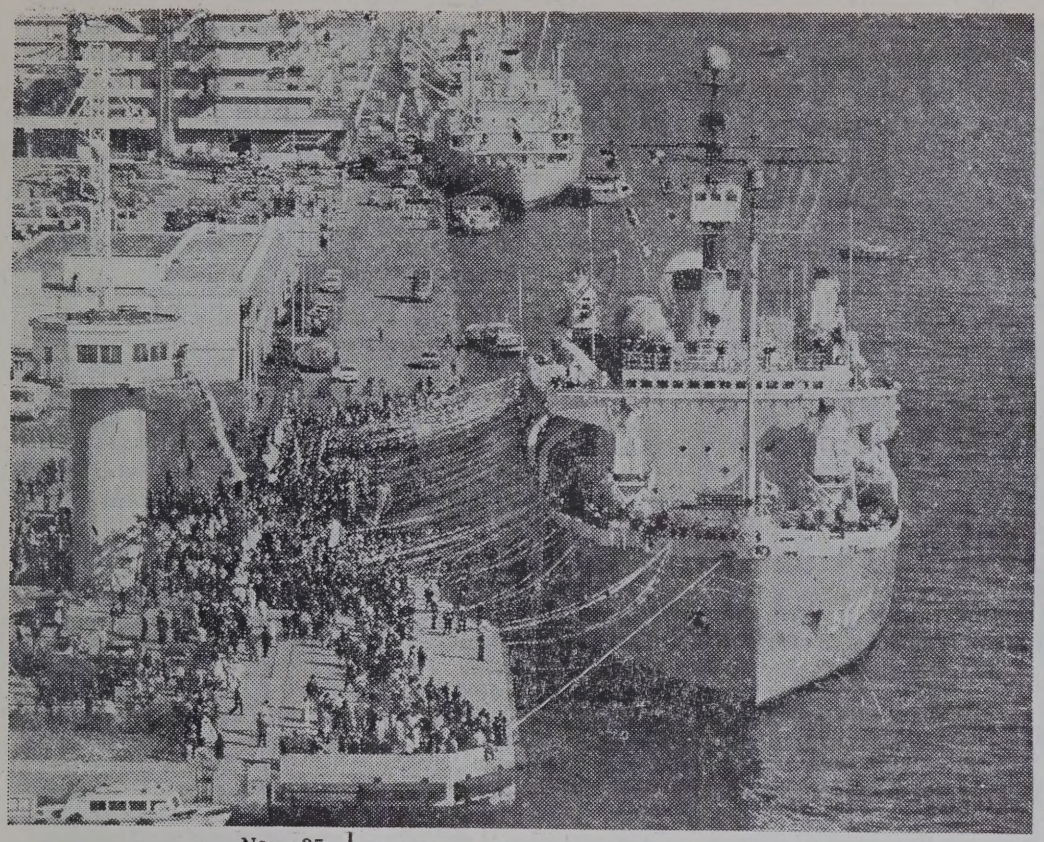
"Any implications, such as those recently published, to the effect that baby seals are harvested, that harvesting is depleting the herd, that harvesting methods are inefficient or inhumane or indiscriminate, are totally unfounded," he said.

Pipeline to Be Deactivated

ANCHORAGE, July 10 (AP)— More than two-thirds of the Army's 626-mile petroleum products pipeline between Haines and Fairbanks will be deactivated in the next few weks, the commander of the United States Army-Alaska announced yesterday.

The 432-mile-long southern segment of the pipeline between Haines and Tok, including portions in British Columbia and Yukon Territory, will be placed on standby because of economic and environmental factors, Maj. Gen. James F. Hollingsworth said.

The eight-inch line was built in 1954 and 1955 to carry petroleum products — primarily aircraft fuel—to military installations in the Alaskan interior. It was described in an Army report earlier this year as being in "deteriorating condition."



Nov. 25

WELL-WISHERS see off the 7,660-ton icebreaker Fuji as it leaves Tokyo's Harumi Pier Thursday for Antarctica, carrying the 13th Japanese Antarctic observation team made up of 40 members. The ship equipped with new reinforced propellers, manned by a crew of 182 commanded by Captain Fuyuki Maeda, is scheduled to arrive off Antarctica in early January to land a 30-man wintering team and unload supplies. It will leave the Japanese Showa base on Ongul Island in March with the 12th 29-man wintering team.

A send-off party for the 40 members of the 13th expedition team to the Antarctica and the 182 crew members of icebreaker Fuji was held

The 13th wintering team, led by Sadao Kawaguchi, aims at spending a winter season at a point on the continent 300 km. southeast of Showa Base for the first time.

The party Wednesday, sponsored by the Antarctic Region Observation Headquarters of the Education Ministry, was attended by about 500 persons including families of the expedition crew members.

Among them were Takeshi Nagata, a professor at the University of Tokyo, and Masami Murayama, head of the Polar Regions Research Center.

Scientist Finds Pollution Is Spreading to Antarctica

Dec. 11

AMUNDSEN-SCOTT SOUTH POLE STATION (AP) — The most unpolluted region of the world, Antarctica, is being contaminated by pollutants from the Northern Hemisphere.

Most kinds of pollutants found in Los Angeles are being identified here at the bottom of the world, says one scientist who is wintering at this desolate base to study the spread of pollution. One purpose is to determine how much and how widely airborne pollutants are spreading around the earth and what influence this may have on world climate.

Pollutants in the atmosphere might reduce sunlight and heat, decrease the layer of ozone that blocks out dangerous amounts of the sun's ultraviolet light or have other effects.

Just one of the projects of Vernon Rumble of Boulder, Colo., involves relationships between ozone and pollutants and he finds a small but significant recent increase in such pollutants are sulfur dioxide which occur in big U.S. cities.

Earlier, scientists working elsewhere in the Antarctic found traces of DDT in penguins and increasing deposition of lead in snow falling over the last 25 years. The snow forms ice layers similar to tree rings; hence the contents of these layers can be dated.

Oct. 6

BLACKSBURG, Va. (AP)— Scientists who want to travel first class on their expeditions to Antartica have been blamed for increasing pollution at the bottom of the world.

Dr. George Llano, manager of polar biological programs with the National Science Foundation, told a national conference on conservation problems of Antartica and polar waters that the "first class" attitude has led to garbage dumps that contaminate the work of those seeking unspoiled conditions.

"They wanted to have beer, so we have the beer cans," Llanc said of the scientists, many of whom did work financed by his organization. "They wanted to have soft drinks, so we have had the cans."

Dr. Roy Cameron of the California Institute of Technology, said scientists working to find microorganisms in the snow-free dry valleys near McMurdo Station had uncovered litter left by expeditions 10 years ago, including half-eaten candy bars preserved by the continuous cold.

Debris, Cameron said, has contaminated the valleys and compromised the work of the biologists.

Cameron said the worst situation, however, exists at McMurdo Station itself, the main Navy installation. The station, he said, is "notorious for its dump on its beach and approach to the station."

Dr. Paul Tyler, a Marine commander and a physician with 10 years of Antarctic experience, said the only way to reduce the pollution is to reduce the number of people allowed to go to Antarctica. "Everything you take there has to be disposed of," he said.

The conference is being held at Virginia Polytechnic Institute.

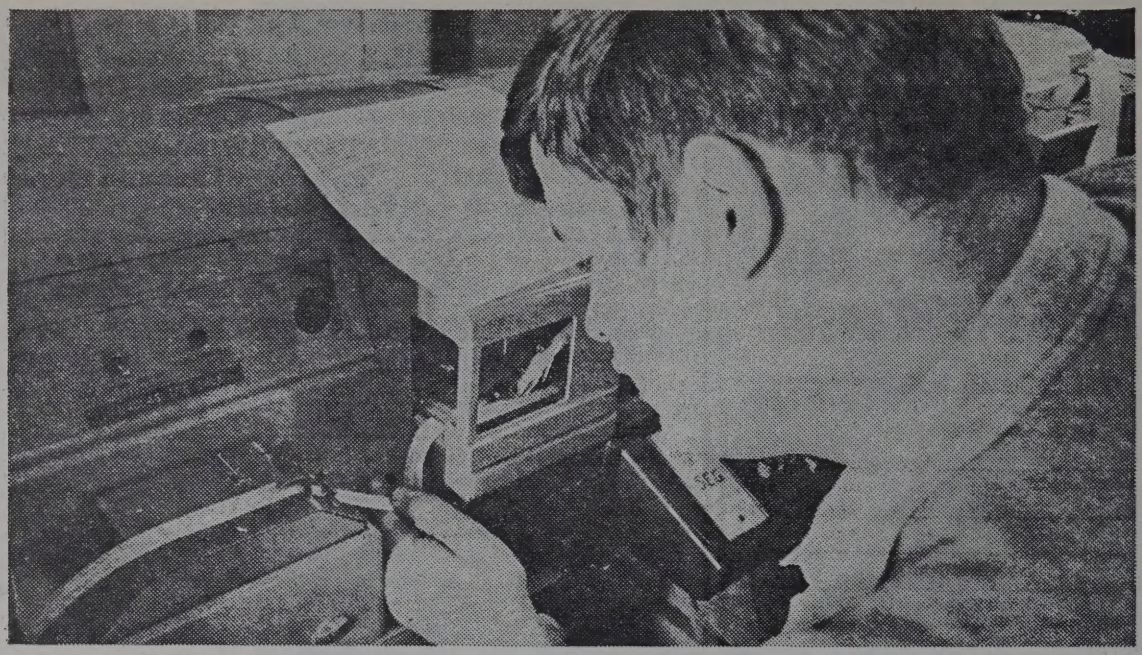
Precise Site Of Pole Sought By Satellites

WASHINGTON, Dec. 8 (UPI)

Five polar orbiting satellites and a signal receiver used by the Navy for ship navigation have been put to work to determine the precise position of the South Pole and other geographical points in Antarctica.

The Johns Hopkins applied Physics Laboratory, which developed the Navy satellite navigation system, said yesterday that the project will continue from Dec. 15 to Feb. 15. The signal receiver will collect data from five satellites, which make 30 to 35 passes over Antarctica every 24 hours. The information will be analyzed at the applied Physics Laboratory in Howard County, Md.

Robert D. Hester of the laboratory said he expects the project to establish positions with an accuracy of "better than 50 feet." The fixes also are expected to disclose the speed and direction of the slowly moving glacier



THERE'S NOT much time to see Christchurch sights during peak season of Operation Deep Freeze. Messages from the Antarctic keep Electronics Technician Third James M. Gowler, above, and others busy 24 hours a day in NavComSta message center.

DUTY IN CHRISTCHURCH

CHRISTCHURCH, New Zealand — The Garden City of the South Island provides a background of culture and beauty for American Navy men and their families stationed with the U. S. Naval Communications Unit, the southernmost link in the worldwide Defense Communications Agency.

An assignment at the Christchurch communications station is unique in several ways.

It's the U.S. Navy's only shore-duty assignment in New Zealand and its location on the far side of Harewood International Airport keeps it out of the daily hustle and bustle of other military units in the area, yet close enough to be considered one of the major military facilities.

The station, located about eight miles west of the city, is often surrounded by grazing cattle and sheep.

Most Navy men welcome an assignment to Christchurch and may bring their families for the three-year tour of duty even though they know well in advance that they must secure housing on the civilian economy.

Once settled, the American families shop in the local supermarkets and the small milk bars, send their children to community schools, join local service clubs and attend community churches as they take their place in the New Zealand community.

Lt. Cmdr. Toner C. Haskins Jr., officer-in-charge of the 24-man crew at the Communications Unit, says the workload at the station ranges from around 3150 messages a week up to 8500.

"Our biggest week of traffic this year," Haskins stated, "was one of the final weeks of last season's Operation Deep Freeze."

The station's biggest mission is serving as "The Voice of Operation Deep Freeze", a communications link that often stretches from the bottom of the world to the head offices of the Navy in Washington.

"We are the last outpost," said Senior Chief Radioman William G. Walters, who serves as the executive office of the station.

Although the Navy's role in the Antarctic generates the major portion of the Communication Unit's workload, services also are provided to other American military units in New Zealand, Australia and the Philippines.

"We also work with the New Zealand Defense System and the Wellington Weather Service in a mutual program of cooperation between the United States and New Zealand," said Chief Radioman Sam Minton, supervisor of all message traffic handled at the station.

Minton explained that the communications station is a minor relay center, which copies and relays traffic on to other stations and places in other countries.

Walters says a high-priority message coming from the South Pole Station at the bottom of the world, for example, could be copied at Christchurch and relayed on to Washington in about eight minutes.

"We could do it that fast," he said, "if conditions were good and the weather didn't affect the communications lines."

Navy communications are vital and must be at peak performance around the clock, seven days a week, especially from mid-September through mid-March. Then there is no unnecessary leave or liberty for the men assigned to the station — that's Deep Freeze season.

Walters keeps a 24-hour watch at the transmitter shack and at the message center in Operation Deep Freeze's advance headquarters building at the Christchurch airport complex.

"We like to feel that we are perhaps the most important part of the Navy in New Zealand," Walters said, "but I guess we are no more indispensable than any other group of communicators."

During the Austral summer in Antarctica, some 2000 men from the U.S. Navy, Army, Air Force and Coast Guard are brought together to provide logistic support for American scientists working there.

"We handle so many messages per week that there just isn't any time for liberty or vacations," Walters said.

When the men of Task Force 43 (Operation Deep Freeze) deploy back to their home units in the states, the sailors permanently assigned at Christchurch begin to enjoy New Zealand's natural beauty.

They take advantage of the excellent hunting and fishing, or they relax on the nearby beaches.

"This is a country that is easy and beautiful to photograph and enjoy, and that's just what my men do when they can," Haskins said.

NAVY TIMES

Solo Flight — Over the Poles

By BRUCE LEE
Redwood City Tribune

Dec. 4

After 28 days and 12 minutes of historic flying around the world, pole-to-pole, solo pilot Elgen Long of Woodside landed yesterday at San Francisco International Airport to a tumultuous greeting that Long happily said was "the highlight of my trip."

Long, 44, landed at 2:45.28 p.m., almost four hours later than his scheduled arrival. The delay was caused, he explained with embarrassment, because he overslept in Honolulu.

When he safely touched down, he completed an 31,000-mile odyssey that set eight flying records and, more importantly, "proved that any man can realize his dreams.

"I flew alone to where no man has flown before. So I say to people who have a similar impossible dream, 'Have at it; don't give it up.' "

Since he left last Nov. 5, Long has set these solo flying records — and realized a dream he has cherished for 23 years:

Landed on all seven continents, the first solo, around-the-world flyer to do so.

Crossed over both North and South poles.

Crossed the equator at the prime and 180th meridians.

Flown across the Antarctica.

Flown from Antarctica to Australia.

He also set three other Federation Aeronautique International (FAI) Class C flying records.

His accomplishments were commemorated by word and placque yesterday during formal ceremonies in a Flying Tiger hangar made available for the occasions.

Aviation and civic officials lauded him. A Woodside neighbor, Mrs. Shirley Temple Black, famous through the years first for movies and then her United Nations representations, spoke glowingly of Long's accomplishments.

His flight, Long said later, required 215 hours of actual flying time, and his plane performed so beautifully "I didn't even take the cowlings off the engines at the stop-overs. It actually was safer not to work on them."

He praised his Inertial Navigation System (INS) which allowed him to fly "blind" for long periods of time and still arrive almost precisely at his destination.

Flying across the Antarctic, he said, the INS was invaluable.

"My cabin heater went out and it was 40 degrees below zero outside and a 70-mile-an-hour wind howling," he said. "I flew for what must have been eight or 10 hours on instruments — absolutely couldn't see a thing in any direction — and came right in to McMurdo. I'd never have made it without the INS.

CAPT. ELGEN M. LONG
a raft of records

"The Navy crews there, by the way, were just marvelous. My feet were so numb from cold I had to go to the hospital for a checkup. After a shower they were OK, but I was told to go to bed. The Navy crews, working all night in a blizzard, literally kept my plane from blowing away. They rolled in oil drums to use for tie-downs, and they parked big fire trucks as wind-breaks, moving the trucks and the plane all night as the wind shifted."

At no time, Long said, did he consider quitting. "I was committed to finishing," he said simply.

He acknowledged that, as an aviation pioneer, his navigational aids made it easier for him than earlier-year pioneers such as Lindburgh (who flew solo across the Atlantic in 1927, the year Long was born).

"But I wonder if maybe my flight is the last of this sort of aviation endeavor," Long mused. "I've wrapped up a lot of things that had never been done before in one flight."

"I'm going to rest and sleep for a month," Long said. "And then go back to flying — as a commercial pilot."

"The kind of flying I do ordinarily — the safety factor is always first. If anything goes wrong, you take care of the mechanical failure first. You don't worry about making the destination.

"But in this, the only thing I had to remember was that it had to be completed. It was a whole different ball game. I flew into a blizzard in Antarctica and I knew full well that if an electro-mechanical device — the inertial guidance system — were to fail me, I would never make it to McMurdo Sound.

He had odd thoughts. Although it is, of course, impossible as a physical reality, he had the odd sensation, after crossing the North Pole, that the plane was going downhill. "I even looked at the air speed indicator," he said. "I had this feeling that the plane must be going downhill, because I had crossed over the Pole."

There were no lights at all for many hours. His radio contact failed for eight hours crossing the Polar ice cap.

Finally, there was a single red light below in the immense desolation of the great island of Spitsbergen, Norway — from a mining camp — and the first big town after that was Stockholm.

NORTHERN HEMISPHERE

SOUTHERN HEMISPHERE

Whale Doomed, Ecologists Say, But Industry Sees Fear as Myth

By JAMES P. STERBA
The New York Times

TOKYO—The 518 crewmen of Kyokuyo Maru No. 3, one of the world's largest whaling factory ships, were led in a banzai cheer. Then, as the ship—as long as two football fields—was tugged from its berth at Chiba, on Tokyo Bay, colored streamers stretched between the crewmen and their families, whom they would not see for the six months they will spend in the Antarctic.

Despite the cheers and the streamers, this modern whaling expedition would have none of the romance about which Herman Melville wrote. Whale herds would be located by scout ships and sonar, frightened by high-pitched sounds and chased to near - exhaustion. An explobe embedded deep in a whale's body, after which the carcass would be towed to a factory ship, to be sliced into parts within an hour.

In Captain Ahab's day a whaling boat averaged a whale a month; today, it is estimated, a whale is killed every 12 minutes by the worldwide industry. American conservationists maintain that the whales are threatened with extinction.

The conservationists, deploring the commercial killing, persuaded the United States Government last December to forbid imports of whale products and, in March, to eliminate American whaling. They are now seeking a worldwide moratorium.

But the Soviet Union and Japan, which together killed 84 per cent of the more than 42,000 whales reported taken last year, accept neither the argument nor the moratorium idea. Both countries use whale meat for food, and whale products go into such diverse items as transmission fluid, lipstick, fertilizer and animal feed—for all of which there are adequate substitute sources.

Officials in Tokyo maintain that whale meat is an essential of the Japanese diet, accounting for 10 per cent of the animal-protein intake in 1969. Soviet spokesmen say populations in underdeveloped Siberia and the Asian regions rely on whale meat as a cheap source of protein even though it is mostly used for dog and cat food around Moscow.

The New York Times

A white female beluga whale. More of her relatives were reported killed by modern whalers, armed with harpoon guns, this century than in three previous centuries.

Nearly everyone concerned with whaling agrees that several species of the giant sea mammals—the largest of which outweigh prehistoric dinosaurs—have been reduced to remnants.

According to whaling records, modern whalers with harpoon guns mounted on fast killer boats have taken more whales in the last 48 years than were killed in the previous four centuries by their brethren with hand harpoons.

It is another example, conservationists assert, of man's wasteful management of a valuable natural resource. Kept to "maximum sustainable yield"—at which the birthrate determines the number killed—whales could have provided food for millions of people indefinitely.

Some scientists fear that the decline in whales will cause ecological disruption of the oceans. Others believe that whaling should cease because the sea mammals—the whale and the porpoise—have intelligence closest to that of man and should be carefully studied.

Of the eight largest species, the right and bowhead whales — targets in the 18th and 19th centuries because they were slow and floated when killed — are virtually extinct. Blue, humpback and gray whales have been reduced from hundreds of thousands to a few thousand 40 years and they are nominally protected by whaling nations.

Stocks of three other species — finback, sei and sperm — have been reduced by more than half, but they continue to be hunted under international sanction despite the contention that they are destined to share the fate of the others. Many whalers and officials in Japan describe that view as emotional nonsense.

International efforts to preserve whale herds at levels of maximum sustainable yield were late in coming and have been largely unsuccessful. The International Whaling Commission, established by 17 nations in 1946 with no enforcement powers, began setting yearly kill quotas all except the sperm whale in 1949.

Quotas for sperm whales in the North Pacific were established last year, but limitless killing is allowed everywhere else.

Quotas have dropped sharply since in 1949 in the Antarctic, which has been the world's major whaling ground since Norwegians discovered extensive herds there in 1904. Conservationists say the decrease shows that the quotas have consistently been set too high by delegates representing whaling concerns.

One of Japan's two delegates is Iwao Fujita, a former commission chairman who is also president of the Japan Fisheries Association, which lobbies on behalf of fishing companies.

Dr. Douglas G. Chapman, chairman of the commission's scientific committee, said in recent United States Congressional testimony: "During its early years the commission took a number of restrictive acts, but unfortunately, in general, the restrictions were too little too late and were often rendered ineffective by individual vetoes."

The 10-year moratorium proposed by the United States would undercut the commission at a time when it is just beginning to be effective, he added.

The issue of control reaches down to the individual whaler. Below decks on Kyokwyo Maru, amid boilers for turning blubber into oil and refrigeration compartments for storing meat, there was a strong aroma of dead whales taken weeks before. Two decks below the bridge Capt. K. Yanagisawa had readied an officer's cabin for an international observer, who was to make sure that protected whales were not killed and quotas not exceeded and that seasons were observed. He did not show up.

An international observer plan was proposed by Norway in 1955 but has been put off since. In late September Japan, the Soviet Union and Norway — each suspecting the other of violations— initialed an Antarctic observer agreement. Japan and the Soviet Union, with three factory ships and about 40 killer boats each, and Norway, with one small combination killer-factory ship, reported killing 11,770 whales in the Antarctic last year.

Before the agreement could be ratified and observers could get aboard, the Soviet fleets sailed, so the Japanese fleets will not have international observers either. Officials said the Soviet fleets could have easily waited a few more days since the season does not open until Dec. 5.

The empty cabin on Kyokuyo Maru will be occupied by the best-paid man aboard — the chief harpoon ginner. His men, on nine fast 750-ton killer boats, aim and fire the 150-pound harpoons.

Another international observer agreement was signed last month for the North Pacific season, which begins next spring, but it still needs governmental ratification. Conservationists say it will represent a major breakthrough — if it goes into effect.

All the controls have their limits. There are 22 coastal whaling stations around the world not bound by the international commission's rules and quotas, although

some countries have their own. From those stations killer boats go out for short periods and tow back catches for processing on shore. Their take last year is listed as 11,719 whales.

The most frenetic whaling took place in the nineteen-thirties and from the end of World War II until the mid-sixties. In 1961, 21 factory ships, each with roughly a dozen killer boats, scoured the Antarctic, killing 37,350 whales. But as the herds dwindled the major whaling nations that were out for oil lost money and cut back or dropped out.

Although Japan and the Soviet Union have scrapped a total of five fleets since 1960, they have survived because they use whale meat, the price of which has been rising, for human consumption. The others, more wasteful, boiled the meat for its small quantities of oil—most oil comes from blubber—or used it for animal feed and fertilizer.

In Japan the average balleen whale yields 74 per cent edible meat, 24 per cent oil and 2 per cent other non-edible products. Roughly two-thirds of a sperm whale is turned into oil, which is valuable to industry; the other third is a dark, strong-smelling meat that is unpopular here, so large amounts go to the United States as food for mink farms.

Whaling in Japan is an $80-million-a-year business divided among three of the world's largest fishing concerns — Taiyo Fishery Co., Ltd.; Nippon Suisan Co., Ltd., and Kyokuyo Co., Ltd. Diversified companies, their combined sales were about $1.3-billion in 1970.

U.S. Whaling Ban Stops 3-Ship Fleet

POINT RICHMOND, Calif., Dec. 15 (AP)—We'll go no more a'whaling.

The federal government has outlawed whale hunting by Americans, effective today, because it said whales are threatened with extinction.

The only hunters who'll hang up their harpoons have been manning three rusty whalers on this wind-battered point across the bay from San Francisco. They're all that's left of a U.S. whaling fleet that once was the mightiest in the world, 750 ships in 1840.

Antarctic Tests Range From Seals to Planets

Reuter

CHRISTCHURCH, New Zealand—The summer season has come to Antarctica along with its scores of scientists, tons of fresh supplies and plans for intriguing new experiments.

Among the equipment airlifted to Antarctica is gear that will help American Army engineers sink a thermal probe through an estimated 9,500 feet of ice to examine rocks beneath the South Pole.

Other experiments scheduled for the southern hemisphere summer include tying radio transmitters to seals to check their movements and charting and measuring the mass balance of huge glaciers.

Five scientists from the U.S. Geological Survey and the National Aeronautics and Space Administration will be working in the ice-free valleys of southern Victorialand on studies linked to the planned landing of a probe on Mars in 1976.

Scientists and technical experts from the Soviet Union, Japan, Australia, France, New Zealand and Austria will be working in the Antarctic at various points this summer.

Walt Seelig, the U.S. National Science Foundation representative in New Zealand, said the five-man NASA-Geological Survey team linked with the Mars-landing program would arrive soon after Christmas.

He said the valleys they will examine "are believed to be perhaps one of the closest comparisons on earth to a typical Martian surface."

Studies planned by the team will include a test of the Mars landing spacecraft's instruments intended to measure reflection and colors of surface materials.

Included in the foundation's list of 1971-2 summer projects is a detailed search of Antarctica's valleys to select drilling sites for the first deep penetration of the region's rocks.

The valleys in this area are free of ice and snow for reasons scientists thus far have been unable to determine. Japanese and New Zealand scientists will join a U.S. team trying to solve the mystery.

The foundation said an unmanned geophysical station should help increase the amount of data collected at remote sites while "decreasing the costs of collecting it and eliminating the personal hardship involved in manning isolated scientific outposts."

Research ship plows Antarctic unknowns

By Reuter

Punta Arenas, Chile

A tiny U.S. research ship called Hero has earned the right to wear its name proudly after three years in dangerous waters off the Antarctic tip of South America.

The 700-ton vessel, commanded by Capt. Franklin P. Liberty, came unexpectedly into the news during a visit here by Cuban Premier Fidel Castro in November.

Captain Liberty, a veteran merchant seaman from Intervale, N.H., invited Premier Castro aboard his vessel.

The Hero's 10-man crew lined the rail to wave at the bearded Cuban leader when he debarked from a Chilean destroyer that brought him here, and Dr. Castro waved back.

But he was too busy with formal welcoming ceremonies to accept the invitation to visit the ship, owned by the National Science Foundation and operated by the Miami-based Hydrospace Corporation.

The Hero, which has been based in the Chilean port at the gateway to the Antarctic for three years, is preparing for another expedition in the inhospitable waters.

It will include biological surveys, sampling the ocean floor, studying Antarctic seals, and glaciology.

"We're a platform from which the scientists work," the captain said.

The ship is available to any scientist in the world. On previous expeditions it has carried French, German, Canadian, Chilean, and Argentine research workers.

Specially built for survey work, the sturdy vessel carries three laboratories, a deep freeze a dryer and sterlization equipment.

Captain Liberty, son of a Frenchman from Normandy, obviously enjoys the tough work and minimizes the dangers.

But he concedes: "We are navigating in uncharted seas about which we have very little information.

"There are also strong tidal currents and some of the roughest seas I have seen in my life in the merchant navy," He adds quietly.

Icebergs are a frequent hazard. Last year a British ship took several hours to navigate around an iceberg 13 miles long. Many of the submerged ice blocks are as big as the 125-foot long Hero.

"Fortunately, we can detect them by sonar soundings," said the captain.

Scientific work is done in summer because there is too much ice in winter. There is not much to relieve the monotony of work in the lonely seas except for a few friendly dolphins and penguins.

H-BOMB IS TESTED IN THE ALEUTIANS DESPITE PROTEST

Amchitka Island Rocked by Deep Shock Waves From Underground Cavern

By WALLACE TURNER
The New York Times

AMCHITKA ISLAND, Alaska, Nov. 6—The controversial Cannikin bomb test was executed today at 5 P.M., Eastern standard time, after the Supreme Court refused to order a delay.

No earthquake occurred here then (11 A.M., Bering Sea time) but shock waves reverberating from deep strata in the earth rocked this island severely.

The hydrogen bomb created the predicted force of five million tons of TNT, equal to that of a major earthquake. Early indications were that the test, the most powerful underground blast detonated by this nation, was conducted successfully and safely.

The New York Times

The chairman of the Atomic Energy Commission said afterward that the explosion's effects "were well within the range of projections" and that the blast had recorded "7.0 on the Richter Scale"—evidence that the bomb had created the five-megaton force that was expected to be its maximum output.

Buildings at ground zero—directly above the site of the buried bomb—were left standing. The A.E.C. chairman, James R. Schlesinger, in a blockhouse 23 miles away, described the shock waves as "like being in a rocking cable car."

The rumbling shock waves were felt on the island for about one minute. It was not immediately known whether the bomb produced X-rays, gamma rays and neutrons in the force that was sought.

Cannikin's shock was a side roll that made chairs shift and caused radio antennas to lean. It was sharp, and readily discernible, but was not alarming as those here expected.

No radiation was detected after the blast by the ring of instruments around ground zero. It appeared that the force of Cannikin had been successfully confined in the mile-deep containment cavern that was carved from solid rock. Extensive radiation monitoring continues.

Mr. Schlesinger was present on the island, as were two Republican United States Representatives, Craig Hosmer of California and Orval Hansen of Idaho, both members of the Joint Committee on Atomic Energy.

Mr. Schlesinger brought his wife and two daughters. Mrs. Hosmer accompanied her husband.

"It was kind of like a train ride" said nine-year-old Emily Schlesinger. She and her sister Ann, 13, watched television pictures of the ground zero area before and after the test.

Two cameras were focused on the site. They showed the test site heaving before the ground motion put them out of focus. After the test, they were used to scan the area damage even before ground parties went in for inspection.

There were 241 persons on Amchitka when the bomb was detonated. They were all at or near the Northwest Camp, 23 miles away from ground zero.

Shortly after the explosion, Henry G. Vermillion, an A.E.C. official in the Northwest Camp blockhouse, said:

"Rocking motion has begun. It is a considerable rock. The building is swaying back and forth."

The shock waves diminished as they spread out from the blast. On Adak Island, 200 miles east of Achitka, Roy Evans, an official of the Environmental Protection Association, monitoring the effects, said, "There was a very gently rolling motion of the earth." Another E. P. A. observer at Unalaska, 600 miles from Amchitka, said there was "no perceptible motion."

At the time of the blast, a Soviet scientific vessel was cruising 75 miles southeast of Amchitka and there was a small American fishing boat in the 50-mile warning zone, but neither sustained any ill-effects.

Robert E. Miller, Cannikin project director, said that concern voiced by people throughout the world over the test had been "unduly stimulated," but added: "But I understand it."

Mr. Schlesinger reiterated his contention that the test had been necessary, and said it had "minimized the likelihood of a defective warhead being used in the Spartan antiballistic missile."

A half-hour after the blast, the tsunami (big wave) alert was called off.

Weather for the firing was cold and there were 35-mile-an-hour winds. Pending a surface examination of the island tonight and tomorrow, it was not known if there had been landslides or whether some of the sea pinacles had been toppled. Nor was it known whether sea otters, sea lions or fish had been killed by shock waves.

Some of the scientific experiments to test fish and animal reactions to the blast were cut back because of inability to mount them during the gales that buffeted this area last night.

United Press International

AT BLAST SITE: Maj. Gen. Edward B. Giller, left, and James R. Schlesinger, Atomic Energy Commission head, examine cracks in surface after test on Amchitka Island, Alaska.

A-TEST SITE HELD RADIATION-FREE

A.E.C. Finds No Seepage in Amchitka Environment

By RICHARD D. LYONS
The New York Times

WASHINGTON, Nov. 19 — No radiation has been detected entering the environment of Amchitka Island as a result of the Cannikin nuclear test of Nov. 6, the Atomic Energy Commission announced today.

The commission said hundreds of fish had been killed by the explosive force of the five-megaton hydrogen bomb blast, as well as 18 sea otters, four seals and 16 birds. The blast was equivalent to the force of 5 million tons of TNT.

A commission statement said the agency had already started a project to drill almost 6,000 feet down to the cavity created by the blast to take samples of the radioactive debris.

The statement added that the test had been successful "and that preliminary examination of the records indicated that the desired information was obtained."

The purpose of the $200-million test was to make a precise determination of the radiation, especially X-rays, produced by the explosion. The device itself is the prototype warhead for the Spartan antimissile system that is scheduled to be deployed starting in 1974.

Entitled "Summary report on Cannikin effects," the six-part statement said: "There has been no detectable release of radioactivity to marine or surface environment as a result of Cannikin."

One of the main arguments of the groups that opposed the Cannikin project was that the blast would either vent radioactive debris up to the surface or cause faulting of the rock with subsequent release of debris, or that radioactive materials would seep through the rock up and into the overlaying seawater.

Computers Help Fight TB

TORONTO (AP)—Health officials say that the use of computers for keeping track of tuberculosis checkup dates and test information helped reduce the number of TB cases among Canada's 13,000 Eskimos from 948 in 1969 to 516 in 1971.

Schindler honor held at Barrow

BARROW, June 17—A get acquainted happy hour was held at the Naval Arctic Research Laboratory at Barrow Monday evening. The occasion was the 11th anniversary of the arrival at his duty station of John S. Schindler. As a memento of that historic occasion, the co-workers presented him with a hand carved billiken ivory gavel.

Schindler, who came north to do, as he expressed it, "three months work 11 years ago," is now assistant director of NARL. Present were retiring director Dr. Max Brewer, and scientific and maintenance personnel of the organization.

Schindler, Chicago born, has both a bachelor of science and a master's degree from Michigan State University. Both he and Brewer are members of the Explorers Club. It is expected that Schindler will be moved up to fill the vacancy left by Brewer's resignation.

Brewer, NARL director since 1956, will be leaving July 1 to become commissioner of Gov. Egan's new Department of Environmental Conservation at the state capitol.

Brewer cited certain heroes of their own discipline "to whom the laboratory owes much." Included were Schindler, Chaplain Paul Maurer, whose parrish lies vaguely between the North Pole and Greenland, Dr. Frank Tacelka, research scientist of the University of California at Berkeley, John Beck, long time shop foreman, and Kenny Toovak, Eskimo equipment foreman.

When queried about the drastic change in residence from the arctic to the banana belt, Mrs. Brewer, "Mary Lou," reserved comment.

"The kids and I will stay here until Max has established his tent on the beach down there. After living 15 years with the Arctic Ocean for a front yard, and a lake for the back I am sure he'll be unhappy anywhere but immediately on the water," she said.

Brewer named Environment commissioner

May 27

JUNEAU (AP)—Gov. William A. Egan appointed Dr. Max Brewer commissioner of the state's new Department of Environmental Conservation.

The appointment came at a ceremony during which Egan signed into law the bill creating the new department and witnessed Brewer's taking the oath of office.

Brewer, 47, has been director of the Naval Arctic Research Laboratory at Barrow since 1956, a post he held through the University of Alaska. He said he will take a leave of absence from the university to assume his new state duties, and expects to report about mid-July.

The new department is created effective July 1.

Brewer said two high priority areas facing the department initially are the movement of North Slope oil through coastal waters and sewage disposal in rural and urban parts of the state.

He said the new department should concentrate on heading off environmental problems instead of merely dealing with them after they arise.

"An oil spill, or any other environmental mishap, is a failure in the system," he said. "The emphasis should be on prevention."

Brewer first came to Alaska in 1948 to work for the U.S. Geological Survey (USGS), conducting permafrost studies in the Tanana Valley.

Arctic Gas Search Financed

LOS ANGELES, Sept. 3 (Reuters)—A Pacific Lighting Corporation subsidiary today agreed to provide up to $10-million over the next five years for gas exploration work on permit lands in the Arctic Islands, held by a group of United States and Canadian companies. The land permits involved are held in the name of Prairie Oil Royalties, Ltd.

900 OTTER DEATHS TIED TO ATOM BLAST

2 A.E.C. Scientists Report Definite Amchitka Toll

The New York Times

ANCHORAGE, Dec. 11—Two scientists employed by the Atomic Energy Commission say that the five-megaton Cannikin nuclear test on Amchitka in the Aleutian Islands National Wildlife Refuge definitely killed from 900 to 1,100 sea otters.

In an autopsy report made public yesterday, Dr. Robert L. Rausch, chief of the infectious disease section of the Arctic Health Research Center in College, Alaska, discounted any possibility that the animals might have been killed by a severe storm at the time of the Cannikin shot on Nov. 6.

The A. E. C. had Dr Rausch's report when it issued a statement Nov 19 saying that 18 otters had been found dead and that others might be missing.

On Nov. 29, following earlier charges by Alaska Fish and Game Department officials that from 300 to 800 otters had died, an A. E. C. spokesman, David M. Jackson, acknowledged that the kill might have been far higher than the 20 to 100 predicted in the commission's environmental impact statement of June or it's briefing estimate of 20 to 240 otters made on Nov. 6.

After the blast, the commission suggested that the missing animals might have died in the Aleutian storm and been swept out to sea.

But Mr. Rausch said "there is nothing to indicate" that the otters were affected by the weather.

James A. Estes, a University of Arizona doctoral candidate in biology under A. E. C. contract for an otter study made the estimate of 900 to 1,100 dead otters.

Although otters are naturally bouyant, Mr. Estes theorizes that the missing otters were trapped under water by cavitation from the blast. A University of Washington fishing research vessel dredged an otter from 35 fathoms, where the animal had gained negative bouyancy because of the spilt second vacuum created by the violent upheaval of the earth and ocean.

Salmon to Be Surveyed

ABERDEEN, Scotland (AP)—Danish and British fishery authorities will launch a large-scale operation to mark salmon off Greenland to determine how badly they have been decimated by intensified deep sea fishing.

CONGRESS VOTES ALASKA LAND BILL

President Expected to Sign Native Claims Measure

By WILLIAM M. BLAIR
The New York Times

WASHINGTON, Dec. 14 — Congress passed today a bill to pay Alaska's natives $926.5-million and grant them 40 million acres of land in settlement of their century-old land claims.

The complicated bill now goes to President Nixon, who is expected to sign it and end years of controversy over the claims of nearly 55,000 Eskimos, Indians and Aleuts to their ancestral lands.

The House adopted the bill on a roll-call vote of 307 to 60. An hour later, the Senate passed the measure on a voice vote.

The land claims have been recognized since the United States purchased Alaska from Russia in 1867 for $7.2-million, or less than 2 cents an acre.

The natives' rights were restated in 1959 when Alaska became the 49th state. The discovery of oil in the vast state increased the pressure for settlement of the claims by the natives, who seek to share in the state's expanding economy.

Over the years, the bills to resolve the claims became more liberal. At one time, a proposed settlement was 7.2 million acres.

Supporters of the settlement approved today hailed it as the best possible at this time, although critics labeled the amount of money as "the second purchase of Alaska" and "unreasonable for taxpayers to be saddled with."

Don Wright, president of the Alaska Federation of Natives, withheld judgment pending a review and evaluation of the bill by his organization at its annual meeting starting Friday in Anchorage.

He says that he was "generally satisfied" with the bill, which evolved in nearly 20 years of negotiations, but that he had some reservation on technical details involving natives' share in oil and otheh mineral resources.

The bill was a compromise worked out by a Senate-House conference committee in nine sessions. Representative Wayne N. Aspinall, Democrat of Colorado, chairman of the House Interior Committee, told the House that it was a "large settlement" but that it had to be "viewed in the light of those who have used the land for some say, 9,000 years."

The bill contains the following major elements:

¶The natives will be paid $462.5-million from the Treasury over an 11-year period and will receive $500-million more from oil and other mineral revenues from state and Federal lands.

The money will not go directly to the natives. Rather, it will be paid into 12 regional corporations that will be created to invest the money and use it for various projects, including education and housing.

The money will be divided among the 12 corporations on the basis of native populations. Natives will receive shares in the corporations.

Natives who are not permanent residents of the state may organze a 13th corporation, if they so desire, and receive a pro rata share of the money grant.

However, these natives, who live mainly in urban areas outside the state, will not receive any land or share in mineral revenues.

¶The 40 million acres of land will be divided among some 220 villages and the 12 regional corporations. The villages will receive 18.5 million acres in the 25 townships surrounding each village, divided according to population. The villages also will receive 3.5 million acres to be apportioned by the regional corporations, for a total of 22 million acres. The villages will not hold any mineral rights.

¶The corporations will receive mineral rights to the 22 million acres granted to the villages and full title to 16 million acres selected within the township areas surrounding the villages. The 16 million acres will be divided among the 12 corporations on the basis of the area of each region.

¶Two million acres will be used for existing cemetery sites, historical sites, for native groups too small to qualify as villages, for natives whose principal residence is outside a village and for four towns that were originally native villages but are now predominantly non-native.

¶A joint Federal-state land-use planning commission will be established. It will have no regulatory or enforcement functions and will be primarily an advisory body.

¶The Secretary of the Interior will be authorized to designate up to 80 million acres that may be suitable for inclusion on the national park, forest wildlife refuge and wild and scenic river systems.

The bill will lift the "land freeze" imposed by the Johnson Administration on all Federal land pending a settlement of the native claims.

ALASKANS ACCEPT LAND CLAIMS BILL

Nixon Signs Settlement and Calls It 'a Milestone'

The New York Times

ANCHORAGE, Dec. 1[illegible] —The Alaska Federation of Natives voted yesterday to accept a Congressional land claims bill for 40 million acres and $962.5-million.

Minutes later, President Nixon telephoned the group's convention to say he had signed the bill into law. It provides the settlement for Alaska's 55,000 Eskimos, Indians and Aleuts, who have been fighting 104 years for land claims.

"This is a milestone in Alaska's history and in the way our Government deals with natives and Indian people," Mr. Nixon said. "It shows that institutions of government are responsive."

The president of the federation, Donald R. Wright, said: "By no means is it over, this is just the beginning. This is a very serious and important day in history. It would be reasonable to ask for assistance from the business, social and political communities of Alaska in working out the details of the settlement and I'm sure they will be cooperative."

The 40 million acres will be divided among 12 regional corporations drawn along geographical and ethnic lines.

The $962.5-million will be shared by the 12 corporations and by people in the lower 48 states who can claim one-quarter native blood.

Only the Arctic Slope Native Association, representing 4,500 Inupiat Eskimos on Alaska's oil-rich North Slope, and the Washington State native delegation voted against acceptance of the bill. The vote was 511 to 56.

Under the settlement, the Arctic Slope natives get only surface or hunting rights on most of the North Slope lands,which are either federally reserved or tentatively selected by the state.

The Inupiat Eskimos were awarded subsurface selections and mineral rights to be chosen elsewhere, but they want Prudhoe Bay and its petroleum fields.

The Washington State delegation voted against acceptance of the bill because they say that the lower 48-state natives are being discriminated against without any provision for land.

Senator Ted Stevens, Republican of Alaska, told the convention: "The Congress saw fit to enter your request for legislation and confirm title to land that your forefathers have claimed and rightly so. The eyes of the nation are upon you. We will carry the burden for lower 48 Indians who now seek the right to self-determination.

"The settlement means natives will become total business partners in the state."

A dogsled team plows through the snow wastelands near Nome during the never-ending sun period. Snowmobiles have replaced the huskies for most regular heavy work.

MORTON STUDYING ALASKAN PIPELINE

No Decision on Construction Indicated Until 1972

The New York Times

WASHINGTON, Oct. 4 — Secretary of the Interior Rogers C. B. Morton declined to say today when he would authorize construction of the $1-billion trans-Alaska oil pipeline.

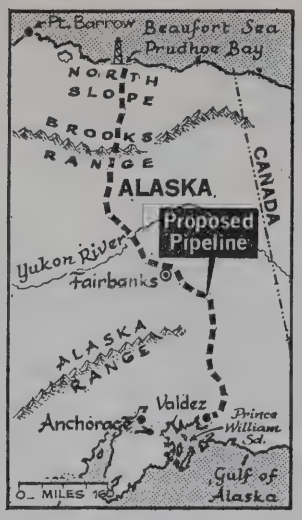
He made it clear, however, that a decision would not be forthcoming until sometime next year and even then "a decision may be up to the court" because of an environmental lawsuit.

He told a news conference that he expected an environmental impact statement, as required by the Environmental Policy Act to be completed by mid-December. "Then we will have a document we can discuss with the (President's Environmental Quality Council, with President Nixon, other agencies and one we can put before the court."

President Nixon, he said, would be briefed "from one end to the other," an indication that the White House was now deeply involved in the politically hot pipeline controversy and was monitoring every move in the fight over oil projects. President Nixon recently directed that further drilling in the Santa Barbara Channel off California be halted.

President Nixon, during his recent trip to Alaska, issued a statement suggesting that the pipeline could be built without serious environmental damage.

He said that the Interior Department had reached the final stages of a statement on the environmental hazards posed by the pipeline.



The New York Times

Mr. Morton reiterated that a pipeline through Canada was not a viable alternative to the trans-Alaska Line. A Canadian line, he said, would be "twice as expensive" and "we don't get the oil where we need it, which is the West Coast." Furthermore, he said, there was "no application on board" for a Canadian route to tap the oil-rich area around Prudhoe Bay in Alaska and pump oil to the mid-continent area.

The Aleyska Pipeline Service Company, a consortium of oil companies, which would construct the Alaska pipeline, opposes the Canada route. Aleyska would construct the 800-mile Alaska line from Prudhoe Bay to Valdez on the Gulf of Alaska where tankers would carry it to the West Coast.

Mr. Morton disclosed that for the "first time" Aleyskaa would construct the pieline on "stipulations we lay down." This agreement, he said, was reached recently. "environmental priorities now are on the same level with economic prioritis," he said.

Marathon Oil Quits North Slope Hunt

By WILLIAM D. SMITH

The New York Times

The golden dream of an oil bonanza from the Alaskan North Slope grew tarnished Dec. 10 for the Marathon Oil Company. The Ohio-based concern announced that it was writing off its unamortized lease investment of $15.1-million in its 13 tracts in the area.

This was the first major announcement by a company of withdrawal from the North Slope area, where frozen tundra covers the largest oil field ever discovered in North America. In 1969, many oil companies bid $900-million for the drilling rights to various tracts in the area.

A spokesman for Marathon in Findlay, Ohio, said the decision was based on:

¶The fact that environmental pressures had radically altered the cost-profit picture for oil in the area;

¶A reappraisal of the potential of its tracts, based on additional geological and seismic information.

The spokesman said that these considerations were weighed against the benefits to be derived from immediate disposal of the land parcels, including tax advantages and improved cash generation.

The company said it planned to dispose of its interest in a majority of tracts before the end of the year. The interests will be acquired by Marathon's partners in the Alaskan venture or will revert to the state, according to industry sources.

The long delay in obtaining permits to build the pipeline necessary to bring the oil down from the North Slope, because of protests by conservationists, and the ever increasing costs of building the line were among the chief economic pressures.

One well had been drilled on the Marathon properties.

The Marathon spokesman said that the company was not writing off Alaska, but only the particular properties at this particular time.

Marathon's partners in the Alaskan venture included the Lousiana Land and Exploration Company, the Hunt Group, the Getty Oil Company and the Amerada-Hess Corporation.

WALRUS CARCASSES PROBLEM IN ALASKA

KOTZEBUE, Alaska (AP) — What do you do with 200 walrus carcasses? The Kotzebue City Council wanted to know.

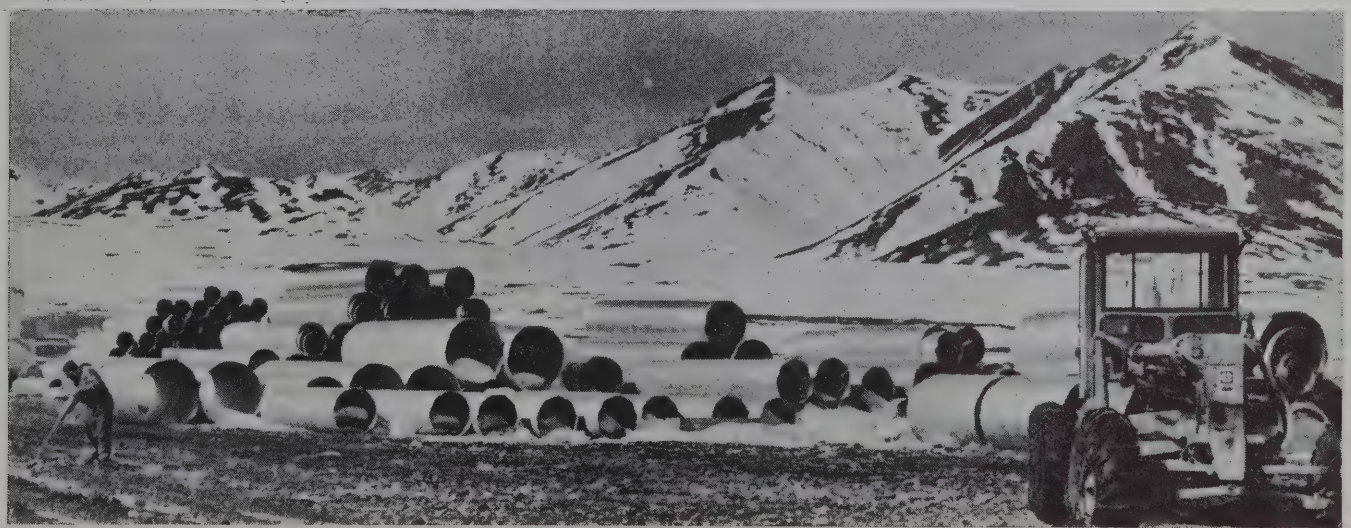
The council asked the Alaska Department of Fish and Game for some solution to the problem of disposing of the decomposing carcasses littering shores of Kotzebue Sound, adjacent to the Chukchiz Sea in northwest Alaska.

The mammals, the largest weighing as much as three tons, began to wash up on beaches.

John Burns of Fairbanks, marine biologist for the Department of Fish and Game, said: "They are some of the animals which were lost during the spring hunt, probably at Little Diomede, King Island or St. Lawrence Island."

FINAL FIRING

The last shot of the War Between the States was fired in the Bering Sea on June 28, 1865, when the Confederate ship Shenandoah, unaware the war had ended two months earlier, destroyed nine Northern whaling vessels.



OIL PIPE RUSTING IN SNOW AT PRUDHOE BAY

Our Hibernating Bases

By J. Anker Nielsen

The writer, Washington correspondent for the Danish newspaper Politiken for the past three years, recently visited Greenland and its U.S. bases.

THULE, Greenland—Old bases, like old soldiers, never die; they only fade away from memory. U.S. soldiers around the world still man outposts from another age in the rapidly changing history of war technology. Some of the most isolated hardship posts are in Greenland, where about a thousand Americans, assisted by twice as many Danish civilian employees, are tracking real and imaginary dangers across the top of the world.

The Air Force captain in charge at the control center pressed a button and about 50 lights flashed on across a map of North America. The lights somewhat resembled upside-down mushroom clouds, each marking the likely target for an intercontinental missile coming from the "Eurasian land mass," as the military euphemism puts it.

The young captain flipped another switch and the simulated alarm was over. Only a flickering light across a green radar screen held the attention for a few more moments. It turned out to be from the remnants of a satellite —one of more than 3,000 pieces of man-made orbital driftwood—sailing across the Arctic sky.

Each of four BMEWS detection screens is the size of a football field.

Much of the watching has been taken over by globe-circling spy satellites, but the huge radar stations that stretch from Alaska across Greenland to Britain are still held necessary to determine the exact course and speed of any flying object.

Thule (pronounced TOO-lee, meaning, roughly, the end of everything) is the northernmost air base in the world, situated only 500 miles from the North Pole at a point midway between New York and Moscow. Originally a small Eskimo trading post, it was used during World War II as a weather station for trans-Atlantic flights and was later leased free of charge by Denmark to the United States as part of the joint NATO defense.

Although Thule and the other Greenland bases were built and are operated by the United States, they are known formally as "Danish-American defense areas," with Danish liaison officers.

In 1960, Thule became the site of the first installation in the Ballistic Missile Early Warning System (BMEWS), which was built to provide an electronic umbrella watching the polar approaches to the North American continent. It is still the largest radar system in the West. Four huge detection screens, each the size of an upright football field, loom over the Arctic landscape and point in different directions, where they can "see" up to 3,000 miles. Inside a dome, 15 stories tall, is housed the rotating tracking radar, which can pinpoint and identify objects down to three feet in diameter.

Thule was once a busy air base which provided support for the Strategic Air Command. Then, one dark night in January, 1968, a B-52 crashed on the ice when coming in for an emergency landing. It took months of painstaking work by several hundred atomic garbagemen to find and remove the debris, which was then sealed in airtight containers and shipped back to nuclear dumping grounds in the United States.

The accident created a political storm in Denmark. The country has always adhered to a policy of not having nuclear weapons based anywhere on its territory, of which Greenland is an integral part. The United States gave assurances that this policy had always been respected, but further study of the orignial 1951 defense contract showed that it contained no non-

clear clause. Denmark sought and obtained clarification through diplomatic channels and no more B-52s have been seen around Greenland since then. This may, however, also be due to the fact that SAC soon thereafter stopped flying its nuclear alert around the clock.

A Lower Profile

THULE, WHICH once had over 10,000 soldiers and civilian workers, was reassigned to the North American Defense Command. Since then, the population has dropped to under 2,000 and dozens of buildings are empty. Runways are still kept clear of the ever-drifting snow and are painted during the summer to prevent them from being heated by the 24-hour Arctic sun and sinking into the permafrost under the concrete, but few planes ever land here.

Do bases like Thule, built at enormous expense, have other functions than just keeping the radars going in the hope that they can still help deter doomsday?

The question is often asked by those who must serve a year up here in total isolation, but nobody seems to know the answer. Local officers point out that the station, besides its original main task, is now fulfilling a useful purpose in tracking peaceful satellites. And then there is always the weather to watch, of course.

Could BMEWS become part of an expanded ABM system and thus a direct link in the defense instead of only a warning that it is too late?

One officer shrugged his shoulders. That, he said, is a political, not a military problem. Personally, he said, he did not believe that we were close to the point where we could hit a bullet with a bullet.

The Washington Post

Ours not to reason why,
Ours just to DEW and DYE.

MUCH FURTHER down the west coast of Greenland, just above the Arctic Circle, is another military installation even older than Thule. During World War II the base at Sondrestromfjord was an important staging point for the long flights across the North Atlantic. Smaller, short-range planes, both civilian and military, still use it, but its main function now is to provide air support for four stations in the Distant Early Warning (DEW) system, which was originally built to warn against manned bombers.

The DEW or DYE stations—as they are called after the headquarters in Ft. Dyer, Canada—are still functioning, although a bomber attack is no longer considered a realistic danger. Besides other purposes, they serve as useful links in the worldwide military communications system.

Two stations, DYE 2 and 3, are built directly over the ice cap, which called for unusual and costly construction methods. Resembling modernistic Oriental temples, the stations are perched above the ground on eight huge steel columns, which must be lengthened periodically as they sink into the ice. Every piece of the 3,000-ton structures was flown in on C-130 cargo planes equipped with skis, the only possible means of transportation beside dog sleds.

Life at these stations is extremely lonely. Moving outdoors is nearly impossible, even when the frequent blizzards are not blowing the loose ice and snow around. "I've been here for six months now but only down that ladder twice," said Richard McLeod, a 27-year-old "radician," as the radar operators are called.

Like the other 21 men on DYE 2, McLeod is a civilian, employed by the Arctic Services division of the International Telephone and Telegraph Corp., which keeps the DEW line going under government contract. Military people are not necessary here, because all observations are fed directly to headquarters for evaluation.

There is not much to report, but the radicians still sit there, 24 hours a day watching their radar screens and perhaps wondering if they are the forgotten men of another era. Like the polar bears during winter they are hibernating, but still alert to unexpected dangers.

Polar Ice

Oct. 20

OLIKTOK, Alaska—Shipping ice to Alaska's North Slope may seem as odd as shipping pineapples to Hawaii or lobsters to Maine.

But it was just done in a big way when three tons of dry ice were airfreighted from Anchorage to two locations on the North Slope.

The ice went to Oliktok and Barter Island where Distant Early Warning (DEW) System stations are operated for the Air Force by ITT Arctic Services, Inc.

Use of the ice in an antenna relocation project was explained by Otto Jans, an engineer with the firm.

New pilings were required for 30-foot antenna towers located on permafrost (permanently frozen ground). The piling consists of steel pipe 12 feet long and 12 inches in diameter.

Holes for the tower pilings were bored in the permafrost and the hollow steel pilings were positioned in the holes. A slurry of thawed ground was then poured into the hole around the piling and dry ice placed inside the piling.

The result was virtually instant permafrost as the dry ice—at about 110 degrees below zero Fahrenheit—froze the slurry. The slurry normally takes days to freeze, but with the dry ice, complete refreezing took place in about 24 hours. Usf the ice enabled work to be completed in short order.

The dry ice was manufactured in Anchorage and then flown to the North Slope. Because of the intense cold and carbon dioxide vapors of dry ice, it had to be shipped in insulated cardboard boxes aboard non-pressurized airplanes.

WEATHER REPORTS WITH SOME TWISTS

THULE AIR BASE, Greenland (AP)—Weather reporting for the United States Air Force weathermen of Detachment 48, 5th Weather Wing here, is a little different from the usual "partly cloudy, with sleet turning into snow" variety.

It goes something like this: "Bay ice motionless. Slight ridging at shoreline with hummocks southwest - northwest with large cracks and numerous puddles from pier to Dundas Mount. Ice blocking entrance to approximately 15-18 miles out. Twenty growlers, five bergy bits in southwest quad, four growlers, 13 bergy bits and 12 icebergs in northwest quad. Water temperature minus one degree Centigrade. Air temperature minus one degree Centigrade. Visibility 25 miles."

The reports provide information for military and civilian vessels in Arctic waters.

An iceberg is a chunk of ice as big as a ship, a bergy bit as big as a small cottage and growler grand-piano size.

Eskimo Display Spurs Demand for Stone Carvings

By EDWARD COWAN
The New York Times

VANCOUVER, Dec. 19—In six weeks an exhibition of 405 pieces of Canadian Eskimo stone sculptures, the largest ever assembled, attracted 32,775 persons to the Vancouver Art Gallery.

Critics acclaimed the exhibition, and the visitors purchased more than 900 copies of the illustrated catalogue at $7.50 each.

The exhibition, which closed recently, will move on during the next 16 months to five European cities, Philadelphia and Ottawa. If, on this grand tour, critical and popular acclaim continue to run high, commercial demand for Eskimo stone carvings could increase appreciably. That might not lead to greater production of pieces of a higher order of artistic merit but it presumably would enable a larger number of Eskimos to support themselves by carving for the popular market.

This prospect of alleviating unemployment and welfare problems that have caused acute distress in many Eskimo settlements and families is one reason the exhibition was organized. Its sponsors are the Governments of Canada and of the Northwest Territories, the Canada Council, the Canadian Eskimo Arts Council and the National Museum of Man in Ottawa.

The Federal Government contributed $175,000 in cash, including $15,000 from the Canada Council, which makes grants to the arts. The Department of National Defense will airlift the exhibition from city to city.

Vancouverites have not flocked to the gallery, which charges adults an admission fee of $1, in such numbers since the 1967 showing of the art of the Indians of the Pacific Coast. That exhibition, like this one, was conceived by the gallery's curator, Doris Shadbolt.

The exhibition is entitled "Sculpture of the Inuit: Masterworks of the Canadian Arctic." It was assembled from 49 private collections and 18 museums and institutions, including the American Museum of Natural History and the Metropolitan Museum of Art, both in New York City. "Inuit" is the Eskimos' word for themselves. It means "the people."

For millennia, Eskimos have lived in the least hospitable climate on earth. Well into the 20th century, the struggle for sheer survival in that hostile environment was the dominant fact of Eskimo life. That preoccupation is reflected in Eskimo carvings, which are done in ivory, bone, antler and so-called soapstone — semisoft stone whose color ranges from jet black to pale gray and serpentine. Most of the carvings depict the hunter, the mother-and-child and the Arctic animals that feed, clothe and threaten Eskimos —seals, caribou, polar bear, ducks, musk-oxen, whales.

Four U.S. Concerns Join Panarctic's Gas Search

By EDWARD COWAN
The New York Times

TORONTO, July 9—Four major United States natural gas distributors bet $75-million today that eventually they will deliver to their customers large volumes of gas from underground pools far north of the Arctic Circle.

An announcement that the four distributors would spend $75-million on exploration and development in the Canadian Arctic was made by Panarctic Oils, Ltd., at its head office in Calgary, Alberta.

Panarctic, a consortium in which the Canadian Government has a 45 per cent interest, has found substantial volumes of natural gas on Melville and King Christian Islands, hundreds of miles north of the Arctic Circle.

Charles R. Hetherington, Panarctic's president, said the financing agreement was based on the "expectation that very large new reserves of natural gas will be disclosed to justify the effort."

Such discoveries could alleviate the intensifying natural gas shortage in the United States, where domestic reserves are down to 12 years' supply at 1970 rates of consumption. Canada's reserve figure was put at 29 years.

The New York Times July 10, 1971

Sites of Canadian gas finds

The participation of the four American pipeline companies also showed that they were confident that a way would be found to bring the gas to market. The biggest problem is how to move it from the islands across the ice-choked sea to the mainland. A submarine pipeline may be the answer.

Then a long pipeline would be needed across the lake-pocked barrens of the Northwest Territories to the provinces and the Canadian-American border. It might join, forming a huge Y, with a line bringing gas southeasterly from Prudhoe Bay, Alaska.

Such a delivery system, years away, would cost several billion dollars and would tend to push energy costs to American consumers above present levels.

The costs of oil and natural gas have been rising in what economists say is the beginning of a long-term upward movement caused by rapidly increasing consumption and concerted action by oil-producing countries to get a higher price.

The four distributors are Columbia Gas System, Inc., the Texas Eastern Transmission Corporation, the Northern Natural Gas Company, and Tenneco Oils and Minerals, Ltd., a unit of Tenneco, Inc. The first three are partners with Alberta Gas Trunk Line Company, Ltd., in a 2,000-foot experimental transmission line at Prudhoe Bay.

In exchange for the $75-million, half of which Tenneco will put up, the four companies will get first opportunity to negotiate gas-export agreements with Panarctic.

With an eye to Canada's growing unease about American ownership of Canadian resources, Mr. Hetherington stressed that "Panarctic will in no way dilute its stock equity." However, the four distributors will get a 1 per cent interest in gas reserves that are developed.

Mr. Hetherington also emphasized that under the law, all gas exports must be certified by the National Energy Board as surplus to Canada's own needs.

Panarctic was set up in 1968 by the Government and 19 private companies to find oil in the Arctic highlands. So far, it has found none. Mr. Hetherington expressed the hope that the intensified exploration now contemplated would lead to an oil strike.

Seas Off West Greenland Feeding Area for Salmon

One of the major feeding grounds for Atlantic salmon was discovered in the Davis Strait off West Greenland less than 10 years ago.

In 1965 Danish fishermen took 36 tons of salmon from the feeding area. Last year about 300 Danes in 35 trawlers took more than 2½ million pounds of salmon in nets which stretch for 10 miles.

American sportsmen say this type of netting is preventing the feeding salmon from returning to Canadian and Norwegian rivers and streams where they spawn.

Greenland Ice

YOKOHAMA, Japan, July 29 (UPI)—Five tons of ice from the Greenland ice cap have arrived for sale in Japan, a whiskey distiller said today. The distiller said the United States was the first to import the "blue ice" which is virtually germ free and up to 3,000 years old. The ice comes in 12½ pound blocks which cost 83 cents each.

Polar Bears Airlifted, Return As They Love the Dump

By JAY WALZ
The New York Times

OTTAWA, Nov. 20—Last month, 24 polar bears were flown out of the town of Churchill, Manitoba, at a cost of about $400 each in a much-publicized rescue operation.

Two of the bears were back in town this week and, according to officials in Ottawa, it is only a matter of time before the others follow.

The airlift, carried out with an old DC-3 plane equipped with two cages, was organized and financed by Brian Davies, executive director of the International Fund for Animal Welfare. Mr. Davies is a 36-year-old conservationist of Fredericton, New Brunswick, who fellow conservationists may remember for his crusades to save the baby seals from the annual spring slaughters in the Gulf of St. Lawrence.

In an effort to rescue the Churchill polar bears, Mr. Davies in recent weeks raised $5,000 to start the airlift. His fund-raising activities were so well publicized that his arrival in Churchill three weeks ago was atttended by reporters from all over Canada, from London, Bonn and Paris, and by a television team from Chicago.

After the airlift, what astonished Jack Howard, acting chief of the wildlife operations for the Manitoba government, was the speed and stamina displayed by the returning animals.

"It may be only 150 miles by air," he said, "But it's more than 300 miles the way the polar bears travel."

The 24 bears were flown to an isolated point on Hudson Bay east of Churchill where it was felt they might go about their winter seal hunting unmolested. The two animals made it back in about 15 days, which means they averaged 20 miles a day. Since polar bears in normal migration cover no more than five miles a day, wildlife men speculate that the rewards of the Churchill garbage dump may have stimulated the bears' natural homing instinct.

The garbage dumps at Churchill and nearby Fort Churchill, a military installation, have become happy hunting grounds for the Arctic bears. Townsmen, bothered by the bears wandering their streets, had felt it better, easier and cheaper to move the animals than the dumps.

A. G. Loughrey, deputy director of the Canadian Wildlife Service in Ottawa, told a reporter that globally the polar bear is in some danger of extinction. But this doesn't seem to be the case in the Churchill area. On a recent flight around Churchill, a port city on Hudson Bay, 1,200 miles north of Ottawa, Mr. Howard spotted 50 to 60 of the animals in one area, and 160 near Cape Churchill.

Douglas Beiers, editor of Churchill's weekly Taigo Times and Tide, said in a telephone interview that a constable of the Royal Canadian Mounted Police shot a bear a few days ago after it had poked its head in the window of Reg Lacey's house while he and his family were having dinner.

Two years ago a Churchill child was badly clawed by a bear.

Mr. Beiers said his paper was about to take a position supporting Mr. Howard's view that 50 of the 100 to 150 bear cubs born every year could be killed during a controlled hunting season without harm to the species.

At present no civilian in any Canadian province may kill a polar bear, although in the Northwest Territories Eskimo hunters are permitted to kill two each a year for food, clothing and income.

STUDY SAYS MAN ALTERS CLIMATE

U.N. Report Links Melting of Polar Ice to His Activities

By SAM POPE BREWER
The New York Times

UNITED NATIONS, N. Y., Sept. 22—A panel of 30 ecological specialists from 14 countries has found that man is unintentionally altering elements in the world's climate and may change the climate of Western Europe.

Prof. Carroll S. Wilson of the Massachusetts Institute of Technology, discussing the findings at the United Nations, said that effects were already being noted on the Arctic icethat lies around the Polar Ice Cap.

There is no prospect for a disastrous rise of the oceans, he said, but the melting of thinner polar ice would tend to let the warm waters of the Gulf Stream continue northward, no longer deflected eastward to warm the coasts of Europe.

The report, called "Inadvertent climate modification," was prepared as a study for the United Nations Conference on the Human Enviornment.

"Ther can be little doubt," the report said, "that man, in the process of reshaping his environment in many ways, has changed the climate of large regions of the earth, and he has probably had some influencs on global climate as well —exactly how much, we do not know."

The panel that prepared the report under Mr. Wilson's direction was sponsored by the Massachusetts Institute of Technology. It held its meetings as guests of the Royal Swedish Academies of sciences and Engineering Sciences.

Mr. Wilson said that it was easier to define the problems than to undertake a program for solving them The question, he said, is "whether man's activities may change the climate of the globe."

He said that it would take from 30 to 50 years to change world activities enough to avoid some consequences of present practices.

The report attributed the climate changes to heat, gases and solid particles accumulating over the Arctic regions from man's activities farther south.

The report indicated that the accumulations in the air—a result of the use of fossil fuels such as coal and petroleum among other things—were raising the temperature over the Arctic Circle.

As to the dangers from melting Polar ice, Mr. Wilson said it had been calculated that, if all the Polar Ice Cap melted, it would raise the world ocean level about 7 meters—roughly 23 feet. However, such a result was not envisioned in the study.

The melting of the thinner Polar ice, the report said, is possible within a century.

SOVIET EXPLOITS UNDERSEA ORES

It Reports on Tin-Dredging Off the Siberian Coast

The New York Times

MOSCOW, Oct. 9 — The Soviet Union says it is making important gains in the exploitation of subsea mineral resources, with a commercial tin-dredging operation under way off the north coast of Siberia.

A review of mining activities on the continental shelf, published in the Moscow industrial daily Sotsialisticheskaya Industriya, also lists magnetite, an iron ore, and titanium-zirconium gravels among minerals recovered in recent years.

The operation off Arctic Siberia, which appears to have begun this summer, is thought to be of particular importance in view of Moscow's efforts to achieve self-sufficiency in tin.

The Soviet Union bought virtually the entire tin output of China — and even re-exported some of it—during the period of close relations between the two countries. Since the Moscow-Peking split began around 1960, the Russians have been developing their own resources, concentrated in the remote, hostile environment of northeastern Siberia as well as in the maritime region of the Far East.

The dredging operation in Van Bay, an inlet of the Laptev Sea, was reported to involve only a specially equipped flat-bottomed barge so far. A more complex vessel that would concentrate the ore on the spot is under construction.

'Everyday' Quake in Alaska

ADAK ISLAND, Alaska, Nov. 23 (AP)—The second Aleutian Island earthquake in three days shook Adak early today, but spokesmen for the National Oceanographic and Atmospheric Administration said it had been a "standard, everyday earthquake."

Spokesmen here said that the temblor had been centred about 32 miles southeast of Adak, or about 70 miles east of Amchitka Island.

Soviets Track Seals

MOSCOW, Nov. 29 (AP)—Soviet scientists use aircraft to map the movements of such fur bearing animals as beavers, sea lions and seals, the Tass news agency reported. It said the information was gathered for hunting as well as scientific purposes.

Stamps

WITH the approach of 1972, postal administrations are announcing stamp-issuing programs for the new year.

Among the 1972 programs announced are:

Britain: February—British polar explorers (Sir Martin Frobisher, Henry Hudson, Sir James Clark Ross and Capt. Robert Falcon Scott)

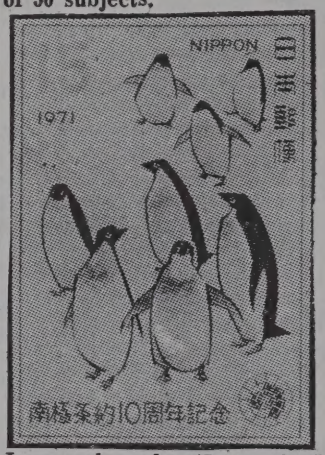
BRITISH ANTARCTIC TERRITORY — Jan. 5: 50th Death Anniversary of Shackleton, 1½, 5, 10, 20 pence. No details.

FRENCH SOUTHERN AND ANTARCTIC TERRITORIES — — December: 10th Anniversary of the Antarctic Treaty, 75 Francs, emblem. Designer, engraver, Bequet; recess, French Stamp Printing Office.

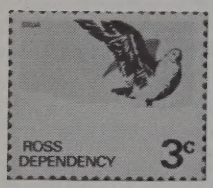
Jan. 24: Bicentennary of the Discovery of the Crozet Islands, 100Fr, the Marquis de Castries placing message (of annexation to France) in bottle and sailors disembarking from ships. Designer, engraver, Bequet; recess, French Stamp Printing Office.

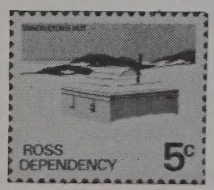
Kayak Mail

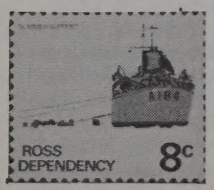
On Nov. 4 Greenland will release the above shown 50 ore featuring kayak transportation as the first in a series illustrating traffic — including the conveyance of mail — in Greenland through the ages. According to the nation's Philatelic Agency, Strandgade, DK-1004, Copenhagen, the stamp was designed by Jens Rosing, engraved by C. Slania and will be printed in sheets of 50 subjects.

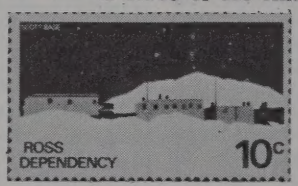


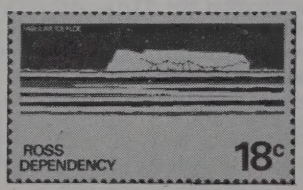
Japan released a 15 yen single on June 23 to commemorate the 10th anniversary of the entry into force of the Antarctic Treaty.











ROSS DEPENDENCY — Six stamps to be issued 18 January 1972 will become the **new definitive series:** 3c, the Skua bird; 4c, N.Z. Air Force Hercules unloading near Williams Field; 5c, Shackleton's Hut at Cape Royds as it appears today; 8c, H.M.N.Z.S. Endeavour supply ship; 10c, Scott Base; 18c, tabular icefloe; des. by Mark Cleverly; lithography by Bradbury, Wilkinson & Co., Ltd.; panes of 100. (Phila. Bur., Private Bag, Wellington.)

Stamp Design of Whaler Criticized

United Press International

The new stamp depicting the Charles W. Morgan whaler

Aug. 10

The whaling ship Charles W. Morgan, a national historic landmark berthed at a seaport museum in Mystic, Conn., may appear on a United States postage stamp with one of its long boats missing. The design for the stamp was unveiled at Mystic last Friday, and immediately there was criticism of the design done by Melboune Brindle, the artist.

Historians at the Mystic museum say the Charles W. Morgan carried three long boats—used for chasing whales—on her port side but Mr. Brindle's design shows only two.

Mr. Brindle said last night that his design was based on photographs supplied by the Marine Historical Association, which maintains the Mystic museum and boat berth. The photographs, he said, show only two long boats, although a davit did exist (and is shown on the stamp design) for the third boat.

The Charles W. Morgan stamp will be one of a block of four 8-cent stamps that will be issued at the same time in San Diego. Part of a "historic preservation" group, the stamps will also show Decatur House, Washington, D.C.; a cable car in San Francisco, and the San Xavier del Bac Mission in San Diego.

GREENLAND. 250th Anniv of Hans Egede's arrival semipostal value benefitting Church Bldg. Fund.

RUSSIA. "Marine Animals" set of five picturing fish varieties.

FRENCH ANTARCTIC (T.A.A.F.)
Five engraved stamps picture fish.

Ernest T. Krenkel Dead at 68; Early Russian Polar Explorer

Spent Nine Months on Ice Floe in Arctic as Radio Man for Study Mission

The New York Times

MOSCOW, Dec. 9 — Ernest Krenkel, a Soviet polar explorer, died yesterday at the age of 68.

One of the pioneers in Soviet exploration of the Arctic, Mr. Krenkel was the radio operator of the four-man team that drifted for nine months in 1937-38 on the first ice floe to be manned for scientific research purposes. In recent years he was director of the Soviet Union's research institute for the design of meteorological instruments.

A popular lecturer on the Arctic, Mr. Krenkel was president of the Soviet Federation of Short-Wave Radio Amateurs and chairman of the Philatelic Society of the U.S.S.R.

He began his career in the Arctic in 1924 and served at Soviet polar research stations at Matochkin Shar, on Novaya Zemlya, on Franz Josef Land and on Severnaya Zemlya off the north coast of Siberia.

Aboard the icebreaker Sibiryakov, he participated in the first voyage in 1932 to cover the entire Northern Sea Route off Siberia in a single navigation season.

Kept World Informed

For nine lonely months Ernest Krenkel kept the world informed of what life was like on an ice floe in the Arctic Ocean not far from the North Pole.

He and three others — Ivan Papanin, chief of the drifting weather station; Eugene Federov, an astronomer, and Peter Shirshov, a marine biologist —had established a scientific ice station on a drifting floe, a triangle 10 feet thick and 1.2 miles in diameter.

Four airplanes had been sent by the Soviet Union to put the men and their equipment down near the North Pole. Their mission had three prime objectives: to study wind, weather and atmosphere pressure; to study ocean depths, currents and surface drifts, and to study life, plant or animal, in the ocean and on the surface.

The four men and a dog, Vessyoly, a samoyed, were left on the floe on June 6, 1937, after months of preparation by a Soviet expedition. For months the floe drifted as had been expected in the current that flows between Greenland and Spitsbergen.

Ernest T. Krenkel as he left for the Arctic in 1937.

At times there was alarm lest the floe break up, and, for that matter, now and then large chunks broke off. But the floe was still big enough, as Mr. Shirshov put it, "for a small town with all its boulevards, squares and parks."

Nevertheless, as the months went by, and Mr. Krenkel sent in daily reports, there was alarm as blizzards tore at the thick ice. Walter Duranty, then the correspondent of The New York Times in Moscow, reported on one occasion that "all of the Soviet Union heaved a sigh of relief" on word of bitter weather checking the breaking-up of the floe as a rescuing icebreaker with a plane on board approached the beleaguered station.

In one of his dispatches Mr. Krenkel wrote:

"Different hours have been fixed for every one of us for scientific observations and work during the 24 hours of the day. We therefore sleep at different hours. We come together only at dinner time, about 3 o'clock in the afternoon.

"I am the permanent night watchman from midnight to 6 o'clock in the morning. At 10 minutes to 6 I wake Federov to get up for his morning meteorological observations. He soon starts drafting his routine weather reports, kneeling before his instruments.

"Our dog, Vessyoly, whines in his sleep. Apparently he has a nightmare. There is a tinkling stillness around. Now and again one hears ice cracking somewhere.

"At 5:30 in the morning I hear a cheerful march from Moscow. I become terrified at the words of the instructor of morning exercises: 'Open the window. Put your shorts on.'"

Picked Up by Icebreaker

The men were picked up by a Soviet icebreaker Feb. 20, 1938, and The Times-editorialized:

"Mankind does march on, despite the hatreds and greed that mark contemporary international politics. Hail Papinin, Shirshov, Federov, Krenkel! The world already adds your names to those of the pioneers wh. have crept over sea and land, plumbed the depths, risen into the stratosphere, all to discover what this planet is and how we human beings can make the most of it."

Mr. Krenkel was made a Hero of the Soviet Union for his work.

Cmdr. Charles Lofgren, 77

WASHINGTON, Nov. 26 — Retired Navy Cmdr. Charles E. Lofgren, 77, national secretary-emeritus of the Fleet Reserve Association, died of cancer Thursday at Bethesda Naval Hospital. He lived in Seminole, Fla.

In addition to his service in both World Wars, and nearly two decades as a congressional lobbyist for Navy enlisted personnel, Cmdr. Lofgren accompanied Cmdr. Richard E. Byrd on the latter's 1928 expedition to Antarctica.

A native of Malden, Mass., he enlisted in the Navy at the age of 17 and three years later became, at that time, the youngest chief petty officer in the Navy.

By the end of World War I he had achieved the rank of lieutenant junior grade.

In 1927, Cmdr. Lofgren became national director of the Fleet Reserve Association, an organization that represents enlisted men in the Navy and Marine Corps.

Eighteen months later, he set out with Byrd on an expedition to Antarctica which lasted 22 months. He served as Byrd's personnel officer and paymaster.

After their return, Cmdr. Lofgren accompanied Byrd on a lecture tour across the country.

During War World II, Cmdr. Lofgren served in the Navy's Bureau of Navigation as personnel officer. He retired in 1947.

He returned to the reserve association for 10 years until he retired from it in 1957. During Cmdr. Lofgren's tenure, the organization grew from a membership of 2,000 to 50,000.

As head of the association's executive office, Cmdr. Lofgren was a registered lobbyist and represented military personnel before many congressional hearings for two decades.

Cmdr. Lofgren was a Mason and a member of the Veterans of Foreign Wars.

He leaves his wife, Una; a son, Fletcher, of Glenwood, Calif.; a daughter, Marylin Henze of Poway, Calif.; six grandchildren, and a great grandchild.

Frigate Missing for 2 Centuries Found in North

Rankin Inlet, Northwest Territories –AP– A team of seven explorers says it has found the frigate Albany, lost more than 250 years ago in Hudson Bay on a trading and exploration expedition.

Eric Disley of Toronto, a spokesman for the team, said the group found the frigate intact in 27 feet of water and is confident the sloop Discovery is nearby.

The ships left England about 1718, equipped for a three year search for a northwest passage, and sank a year later during a storm on Rankin Inlet on Hudson Bay, about 900 miles north of Winnipeg.

Hickel Asks Morton to Keep Ban on Hunting Musk Oxen

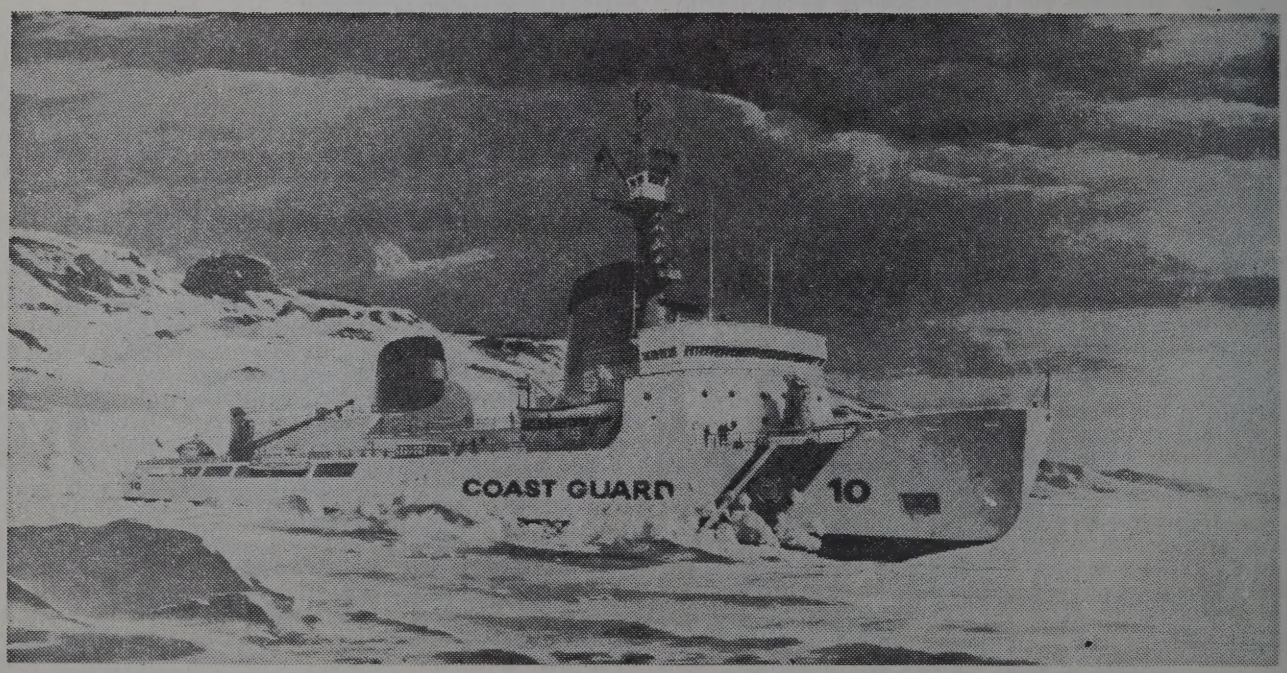
ANCHORAGE, Alaska, Sept. 2 (AP)—Walter J. Hickel, former Secretary of the Interior, has asked Rogers C. B. Morton, his successor in President Nixon's Cabinet, to continue a ban on the public hunting of musk oxen on the Nunivak Island National Wildlife Range.

The animal is usually so gentle that a hunter "could practically walk right up to the beast and stick a gun in its ear," Mr. Hickel said.

The Alaska Department of Fish and Game, in a petition filed with the Interior Department last December, has asked for permission to stage a controlled public hunt to bag about 100 of the older animals in an effort to balance the herd and reverse a declining birth rate.

(U. S. Navy Photo)

One of the great mysteries of the Antarctic: the dry valleys containing no snow or ice.



LOCKHEED ICEBREAKER—A $52,681,485 contract to build "the world's most powerful icebreaker" has been awarded by the Department of Transportation to Lockheed Shipbuilding & Construction Co. of Seattle, a subsidiary of Lockheed Aircraft. This is a drawing of the 400-foot, 12,000-ton ship to be built for the Coast Guard.